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Sub-Theme 1

New Paradigm for Open University

PROCEEDINGS

TOWARDS A NEW AVENUE OF OPEN LEARNING: TEACHER STUDENTS' PERCEPTION ON EXPERIENCES OBTAINED THROUGH OER BASED E-LEARNING COURSE

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Abstract

This paper examine the teacher students' perception on a learning experiences gained by an OER based online course conducted in the Open and Distant Learning (ODL) context. The ODL enables the learners to participate in learning regardless time, age and geographical barriers. With the popularity of Information and Communication Technology and the revolutions of Open Learning concepts, new avenues were opened in the world for the learners to learn any time, any where according to their own pace in an online learning environment. The main aim of this study was to investigate the teacher students' perception regarding new learning experience obtained through OER Based online course, 'Emerging Trends in Education'. The purposive sampling method was used to select 10 participants of this study. Semi structured interviews and reflective thoughts of students were used as the main means of collecting data which were analyzed qualitatively in a descriptive manner in line with identified five themes; initial perception, relevance, strengths, improvements, enjoyments, challenges and issues and further development. It was found that even though the majority of participants did not have any prior exposure for online learning, they were able to proceed the online journey which facilitated by different features such as scenario based learning and discussion forums. Further they were motivated by the prompt feedback obtained by completing online quizzes. The majority of participants who were far away from main campus felt that this learning experience provided more convenience for them to follow it from their homes according to their own pace. Most of the participants highlighted that they improved the skills in using computers and English Language. However all participants felt some problems and issues related to subject matters, technology, accessing internet familiarity with ICT, language, career and family commitments in following this course. It can be concluded that even though this global trends facilitate to enhance student learning in ODL context, much more initiatives should be taken to adapt certain aspects according to the needs of students and familiarize this new trends among the students in ODL context.

Key words: OER, E- Learning, ICT

Introduction

The Distance Education has been existing for more than a century in the world, beginning with correspondence courses that were developed in the late 1800s. The Open and Distance Learning (ODL) developed as a new professionalized field with the theory developed by Charles Wedemeyer (Diehl, 2011). The ODL has evolved in different forms throughout the history with the integration and advancement of new technology. By 1990s the ODL institutions were influenced by revolution in the Information and Communication Technology (ICT) which had developed the personal computers, the internet and the World Wide Web. Within few years after 1st web browser released in 1993, many institutions were experimented the online learning as a new aspect of e-learning in open and distance education for long time. In such a situation, a new movement which focused on to remove the restriction involve in accessing learning resources from copy right regulations to financial constrains

has emerged in the world which is commonly known as Open Education Resources (OER). The both OER movement and online learning have facilitated to go towards a new avenue of open learning. The OER based study programmes have been increasingly developed by different institutions for past few years with the philosophy of creating a knowledge sharing culture.

The global trends regarding OER movement, institutional demands and the familiarization of the ICT in Sri Lankan context were the main catalysts to initiate a project on integrating OER and ICT in teacher education programme of the Open University of Sri Lanka with the collaboration of Commonwealth of Learning in 2013/2014.

As a result of the project, the Department of Special Needs Education selected a compulsory course, 'Emerging Trends in Education' offered for the Postgraduate Diploma in Special Needs Education in order to re-design it as OER based online course and piloted with 20 students. 'Online learning'; as a main aspect of e-learning, the concept of 'OER' and its integration have been perceived as a new avenue of open learning. Therefore this study attempted to investigate the teacher students' perception regarding the new learning experiences obtained by the piloted OER based online course; Emerging Trends in Education.

Objective of the Study

The primary objective of this study is to investigate the ways and means to improve Online learning and OER in Sri Lankan ODL context by examining the teacher students perception.

Research Questions

In order to achieve the above objective following research questions were formulated.

What is the initial perception of teacher students regarding the OER based online course?

What are the strengths of the OER based online course according to their perception?

What are the improvements that teacher student had when following the OER based online course'?

What are the challenges and issues experienced by teacher students in accessing and participating the OER based online course and how to overcome them?

Significance of the Study

The finding of this study will be beneficial for institution where OER based online courses implementing and expected to implement to have an insight about the student perspectives regarding the new learning experiences and think further about the background factors which will facilitate online learning such as physical and technological infrastructure. On the other hand different stake holders who are involving online learning whether OER based or not will be benefited by the finding of this study to rethink about their practice. At micro level the finding of this study is significantly important for the Open University of Sri Lanka and the Department of Special Needs Education to improve their current practices in an effective manner. This study will be contributed to enrich the growing body of research regarding different practices in ODL context.

Literature Review

With the work of Charles Wedemeyer, the concept of Open Learning has emerged which influenced for the evolution of distance learning in a significant manner (Delhi, 2011). The Open Learning is a philosophy of widening access and personal choice in learning. (UNESCO, 2002). The choice may be the time, place, pace, media or assessment. Opening access to education may be the main force of influence for distance learning to be evolved as Open and Distance Learning.

The distance learning is the initial facet of Open and Distance education mode which was evolved from correspondent model as the first generation to sixth generation; intelligence flexible learning model (Taylor, 1999). Technology is the main driving force which was behind the various changes in the above mentioned generations and specially to emerge the concept of e-learning. Integrating technology in the ODL context facilitates students to study in a flexible manner according to their own pace and interests regardless the geographical limitations. In the design and delivery of 21st century distance education large number of higher educational institutions have been using internet and digital technologies to design, develop and deliver the courses for relatively long time. Online teaching and learning rooted the transaction of distance education and advance computer and communication technology (Mehrotra, Hollister & McGahey, 2001). Alonso, López, Manrique, and Viñes (2005) explained e learning as the use of new multimedia technologies and the internet to increase learning quality by easing access to facilities and services as well as distance exchange and collaboration. Basically online learning utilizes internet based tools and resources to enhance student learning.

The movement of OER opened a new direction of the world education which provided many opportunities for learners with no or less restriction of financial and copy right barriers. OER are 'teaching learning and research materials in any medium, digital or otherwise, that reside public domain or have been released under open license that permit no cost access, use, adaptation and redistribution by others with no or limited restrictions (UNESCO, 2012). These materials are useful for producing teaching learning materials with less cost and some of ODL institutions such as Wawasan Open University of Malaysia (Menon, Phalachandra & Emmanuel, 2015) and The Open University of Sri Lanka (Karunanayaka & Naidu, 2014) have initiated projects on integrating OER in course development. The study conducted by Harsasi (2015) regarding the students' perception about the use of OER in online learning can be presented as an empirical evidence which found the use of OER was a new experience for participants to have a better understanding about the topic. Further the majority perceived that OER in English is very easy to understand.

Armstrong (2011) conducted a study to investigate undergraduate perception of online courses indicated that all participants of the sample perceived that online learning gives a self control and flexibility. Zhang and Kenny (2010) emphasized through their study that language proficiency and previous experience strongly impact for the learning in online environment. Yang & Cornelius (2004) conducted a study on students perception towards quality of online education highlighted that students perceived positively regarding online experience due to it's flexibility, cost-effectiveness and electronic research availability but they faced problems in relation to delayed feedback, unavailable technical support, the sense of isolation, monotonous instructional methods, and poorly-designed course content.

However there is lack of empirical evidence in relation to OER integrated online courses in the literature. Therefore it is necessary to have more empirical evidences about different aspects of OER integrated e learning courses in order to improve the practices of OER based online learning in ODL context.

Research Methodology

The qualitative research approach was used in this study to investigate the perception of teacher students through reflective entries and semi structured interviews. Reflective entries were selected as the main mean of data collection method which gives insight about the teachers' personal experiences and professional growth (Borg, 2001). Reflective entries selected from 10 participants out of 20 teacher student who enrolled the pilot online course based on their participation using purposive sampling method. Five teacher students who participated in online course till the end were taken for the interview conducted after the course using semi structured interview schedule. The quotations and phrases of the collected data which were relevant to research questions were highlighted and categorized into the themes; initial perception, relevance, strengths, improvements, enjoyments, challenges and issues and further development. Data were analyzed mainly in a descriptive manner using content analysis method which enables to examine patterns and themes of collected data (Biber & Leavy, 2011). In addition data were presented quantitative manner in order to provide a clear picture regarding teacher students' perception.

Data Analysis

The data collected through reflective entries and semi structured interviews were analyzed in this section. The data obtained through reflections and interviews were mentioned separately. In the data analysis, the priority was given for the data gathered through reflection, if there are no considerable differences with the data obtained through interview.

1. Initial Perception

The participants of this study have exposed for new learning experiences in the online course such as online learning activities, Open Educational Resources, scenario based learning, online assessment activities which were totally new experiences for all students.

Even though English and the computer literacy are considered as pre requisites for succeed in online learning, some of the participants had less exposure in computer usages and were poor in English. With such a background they had some doubt at the initial stage whether they can proceed the course or not which were reveled through their reflections.

"I have a big doubt that I will be able to follow the course with my poor computer and English knowledge"

Above finding can be conformed the data obtain through interview which also indicated that problems in English proficiency and computer usage.

But some participants commented with positive hope regarding the online course of following reasons.

Less geographical barriers:

"It will be benefited to me than others because I 'm far away from Colombo and can follow the course at home"

Access for new and updated knowledge:

" this is a great blessing for young generation because of the availability of newly written and fresh knowledge with OER and other resources".

The data obtained through the interview conformed the above mentioned thoughts. Further some respondents of the interview perceived this online course as a showcase to obtain social benefits as follows,

- To obtain a credit in interviews
- To show others that they follow an online course.

Through the reflections and interview, it can be interpreted that students are keen on to follow this course with positive hopes and different motivations to fulfill their knowledge gap and expectations even with some barriers.

2. Relevance

Majority of participants (8) stated that offering online course in ODL system is so relevant which can be illustrated from the following chart.

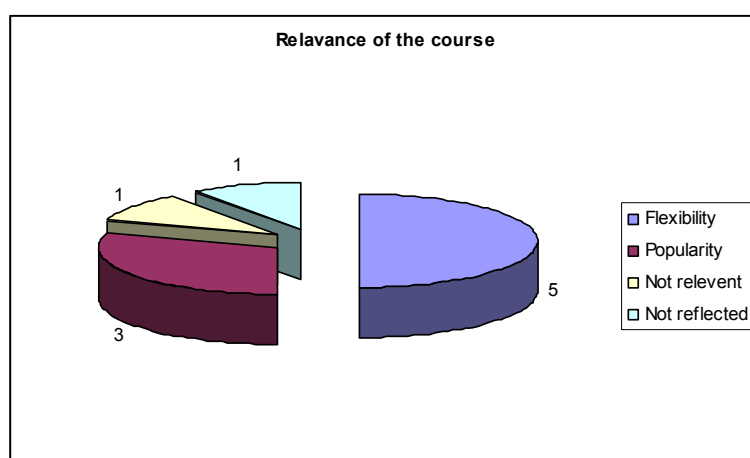


Figure 1: Relevance of OER based online course

According to the above chart, 5 participants stated that this online course is so relevant due to its flexible nature in access, participation etc.

“this provide much freedom to attend to and to work at our own speed and at our own convenience”

Online learning is increasingly adopting various institutions and it is becoming a trend in world education system. Another 3 participants stressed its relevance which could be illustrated from following quotation.

Popularity (3 participants): *‘Online learning is becoming common practice in the world.....*

The above quotations from the reflection illustrate the relevance of OER based online course due to its flexibility, popularity as an emerging trend in the world.

Majority of respondents of interview were totally agree with the relevance of online courses but there was a different view in this regard. For example,

“These type of courses are more suitable for undergraduate who are free from domestic work and family commitments.....I think this is more effective for bachelors”.

It can be interpreted that the back ground factors of the participants such as personal, family and professional commitments negatively influence for the perception regarding relevance.

Strengths of the Course

Through the reflections and interview, participants had positive views about different aspects of online course which could be presents as strengths of this course.

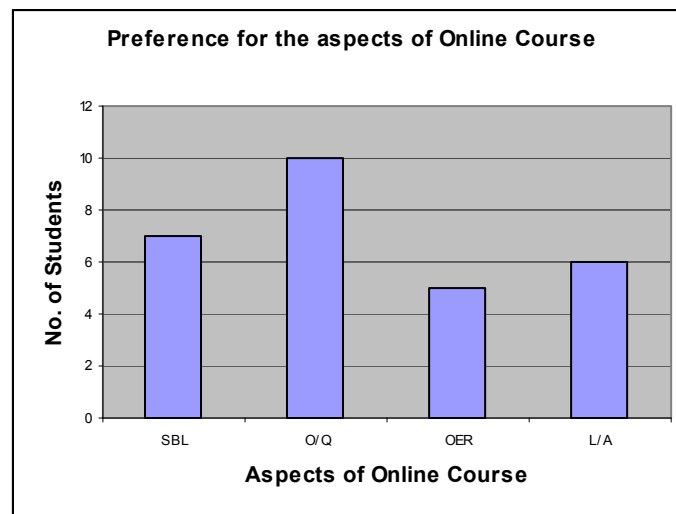


Figure 2: Preference for the aspects of online course

SBL-Scenario Based Learning

O/Q -Online Quiz

L/A-Learning and Assessment Activities

OER- Open Educational Resources

It can be highlighted that according to the table 1, Online Quiz is the most preferred aspect in the online course. All the participants (10) had enjoyed in answering online quiz which was available under 1st session.

The 1st session was really interesting and was a successful piece of work to surf the link available and to answer the questions. The time was quite suitable to the work and the URL was so informative. I really enjoyed activity and posted it right on time got 8 marks out of 10....."

It can be interpreted that the availability of prompt feedback with marks and allowing several attempts are the reasons for the attraction for the online quiz. Furthermore the participant had to spend little time to complete the online activity also a reasons for the interests of students.

The scenarios; the 2nd most preferred aspect, facilitated them to make an approach to OER, other resources and learning activities due to it's unique features.

Simple language: 'the case studies were easy to read and understand and it motivated me to learn about school drop out further'

The way of organizing scenario: This approach is totally new experience, It is just like a story, I feel I'm in a real world, scenarios are getting gradual access to resources.

Some of the purposes of developing scenarios are making a link between subject matter and the real world and making a gradual approach for lesson content by giving a threat at the end of the scenarios have been achieved in this course which can be proved from the above quotations.

According to the responses of participants, online learning activities specially online quiz is the main strength of the particular course.

The students were supposed to upload two assignments and one power point presentation as learning and assessment activities. Guidelines and assessment criteria were given each of above mentioned activities to facilitate the students. These criteria of learning and assessment activities has given a proper direction to complete the task which could be evident quotation such as

‘easy to organize our answer according to given word limit, rubrics guided me to prepare it.

According to the reflections of participant majority (6) were facilitated by the guidelines provided in each activities.

The 5 participants out of 10 were reflected about the OER and other web resources were helped them to access new and updated knowledge regarding different different themes in the course. Further The page numbers and relevant sections which were specified in the OER resources were so helpful for participants to refer the resources. For example;

“We also follow this online course with a busy work schedule. Referring selected pages instead of whole article is so helpful to manage our time”.

As a whole according to the reflections many strengths could be seen with regard to the scenarios, learning and assessment activities and OER. The responses of interviews were in line with the above reflection especially in relation to scenario, online quiz and assessment activities.

Improvements and Enjoyments

This section illustrates the improvements and enjoyments experienced through online course on perspectives of the participants through reflections and interviews. The teacher students enrolled the course with a hope of capacity building in relation to the aspects mentioned in table 1.

Table 1: Responses of Participants Regarding the Improvements of the Online Course

Improvements	Examples
Computer skills:	<i>“ it was a great opportunity to update my computer skills”. (Reflection)</i>
English:	<i>“Earlier I even didn’t think to follow a course in English, therefore I had a big doubt .But now I feel I would be able to improve my English because of this course’. (Interview)</i>
Online learning skills:	<i>“Online learning is totally a new thing for me. First time I was so afraid to press a button even. but I became familiar with this environment day by day..... (Interview)</i>
Knowledge related to subject matter:	<i>“From that research article I came to know the issues of school dropouts are common issue not only in Nigeria, but also in Sri Lanka.” (Reflection)</i>
Motivation for further learning:	<i>‘the case study of the 1st session was easy to read and understand and it motivated me to learn about school drop out further’. (Reflection)</i>

It is obvious that this course help the participants to improve not only their skills and knowledge but also attitudes in relation to further learning, positive attitudes in relation to learning English and usage of computers as well.

The participants highlighted that the most enjoyable and interesting task was online quiz. It can be interpreted that following are the reasons behind this interest.

Availability of prompt feedback
Little time for completion
Possibility to make several attempt and
Shortness of the learning task.

Similarly the other learning task such as discussion forum and making power point presentation also have been enjoyed. Following quotation can be presented as an example.

*Unable to express what is in my mind in English, I used other way and some how communicated. Any how I'm happy'
It was so interesting. I made a PPT with text and images..*

As a whole the participants have enjoyed the online learning task even with some barriers created by English and computer literacy.

Issues and Challenges

The participants have perceived some issues and challenges in following online course which is illustrated in the following table.

Table 2: Problems and Issues Perceived by the Participants

Reflection	Interview
Usage of English	
Coverage Problems	Managing personal and Professional life
Slow internet connection	Time management
Problems in downloading	
Unavailability of internet facilities at home	Less skills regarding computer usage

According to the above table usage of English is the common issue emerged through both reflection and interviews.

"The attempt that I made to understand the required reading were lot.. tried to translate it into Sinhala, but it is time consuming and not easy as well"

Above quotation extracted from interview has shown the struggle made by students to continue the course.

As a whole the above table has demonstrate the perception in two ways as follows.

Reflection: Problems and issues made by the participants while following the online course specially in relation to technical infrastructure deficiencies. *'too slow, I fed up with this.., how much time it took for downloading'*

were some key phrases mentioned in the reflections.

But in the interview the respondent has perceived this learning experience as a whole specially regarding the managing time, work related to personal and professional life and medium of instruction.

Further Development

The participants of the study mentioned in the reflections and interview some suggestions in order to improve this course further as follows.

- Increase the time allocated for online activities
- Translation of required reading into their own language
- Introduce more online learning activities which require little time to complete
- Introduce more offline, face to face sessions to familiar with online environment

The main concern was the time duration allocated for activities because they found difficulties completing the required online activity with their busy work schedule. Therefore it was suggested to extend the time allocated for online activity.

On the other hand it was suggested by the participants who use their mother tongue in learning to translate the required reading resources in relation to OER into their mother tongue. For example one stated at the interview,

“When doing assignments we have to refer required reading which included pages and pages and I found difficulties to read them so please translate them to Sinhala”.

All the participants pointed out through the interview and reflective thoughts to introduce more online activities like online quizzes which require little time to complete.

According to the perception regarding further development of the course, some aspects such as more face to face sessions, increase the time allocated for online activities, translation of required reading to students' mother tongue and introducing relatively short activities which require less time to devote should take in account before starting OER integrated online courses.

Discussion

The main aim of this study was to investigate the teachers, students perception on OER based online course. The participants of this study initially perceived this course as totally a new experience which will require English proficiency and computer literacy. Some of concerns of participants made were to translate material in to mother tongue and introducing short online learning activities implies that still they are not so comfortable in using English. It was found that language proficiency is a critical factor in participating the online course which is similar with the finding of Zhang and Kenny (2010). Offering this online course within the ODL context provide more flexibility in relation to time, place and pace which is similar with the findings highlighted by some studies (Amstrong, 2011; Yang & Cornelius, 2004).

This learning experience facilitated by different aspects of the course such as scenario based learning, OER, online quizzes, discussion forums and other online activities. The OER perceived by student as an opportunity to obtain new and updated knowledge. This finding can be conformed with the finding of the study conducted by Harsasi (2015). The participants held a positive perception regarding the unique features in online learning which enhanced their learning further. However all participants faced some issues and challenges related to subject matters, accessing the internet, familiarity with ICT, Language, Personal and professional commitment in following this course.

Conclusion and Suggestions

Overall the global trend towards online learning and OER integration facilitated to enhance teacher student learning and develop skills in relation to English language and computer usage. The online quiz was the main attractive and interesting feature in the online learning while scenarios were simple but powerful approach which made a gradual access for the subject content. The required reading in relation to OER has been perceived as a source of new and updated knowledge which enhance learning of students. Further the experience in relation to online learning and OER gave students to learn without coming to the main centre. However students faced challenges and issues basically in relation to English, internet, time, personal and professional commitments etc. It can be concluded that even though this global trend facilitated to enhance student learning, much more initiatives have to be taken to adapt certain aspects according to the needs of students and familiarize the online learning.

It can be suggested, to translate required reading for students who used their mother tongue in their learning, include online activities which need less time to complete, some videos and power point presentations as learning resources which require less time to refer and establish the labs which have fast internet facilities in regional centers to meet the needs of students. Conducting more than one orientation sessions for students to familiarize with online learning and facilitate them to be familiar with computers also suggested. A continuous learning programme to improve the usages of English language of teacher students also suggested as a long term measure.

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MASSIVE OPEN ONLINE COURSES (MOOC); A LEARNER'S PERSPECTIVE

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Abstract

MOOC is a phenomenon of offering free short online courses to anyone who has accessibility to the Internet. The idea is that because of no course fees being imposed tens of thousands of students can join which makes education affordable and accessible (hence, ubiquitous) to everyone. MOOC are offered by many well-known universities such as Harvard, MIT, Stanford University, and University of California at Berkeley to name a few. Courses offered in recent times have course materials created by a university and delivered by video and text. In the context of MOOC, students have substantially more freedom to plan their studies. Literature has shown that connectivist theory is the underlying philosophy in the creation and development of MOOC. Connectivism is the integration of principles explored by chaos, network and complexity and self-organization theories. Learning is seen as outside of learners (within an organization or a database), is focused on connecting specialized information sets and the connections that enables learners to learn more are more important than the current state of knowing (Siemens, 2005). This paper aims to contribute from a learner's perspective by being a participant in a MOOC conducted by a university in Australia in the field of economics, agriculture and natural resources.

Keywords: MOOC, Connectivism, Learner's Perspective

Background of MOOC

The definition of MOOC (Massive Open Online Course) are web-based courses available for free to any participant from any place in the world (Cormier, & Siemens, 2010; Kop & Carroll, 2011). MOOC provide free access to high-quality learning materials, offered by elite universities such as Harvard, MIT, Stanford University, and University of California at Berkeley etc. MOOC are conceptualized as online learning environments in which participants worldwide can create, research, and share open educational resources (Kop & Carroll, 2011). With recent boom in development of educational resources both in industry and academia, MOOC have rapidly moves into a place of prominence in the media, in scholarly publications, and in the mind of the public. The hope is that this new surge of development will bring the vision of equitable access to lifelong learning opportunities within practical reach. MOOC offer much valuable learning experience to students via videos lectures, readings, assignments and exams, to opportunities to connect and collaborate with other through threaded discussion forums and other Web 2.0 technologies.

MOOC was first launched in 2008 and it was called 'Connectivism and Connective Knowledge/2008' (CCK8), created by educators Stephen Downes and George Siemens. Building off a for-credit course at the University of Manitoba, Canada, this was the first class designed behind the acronym of 'MOOC' and used many different platforms to engage students with the topic, including Facebook groups, Wiki pages, blogs, forums and other resources. 2,200 people signed up for CCK8, and 170 of them created their own blogs. The course was free and open, which meant that anyone could join, modify or remix the content without paying (although a paid, certified option was offered).

However, in 2012, another MOOC experiment caught academics' attention. Sebastian Thrun and Peter Norvig from Stanford University decided to offer "Introduction to Artificial Intelligence" for free online. Designed to resemble real classroom experiences and offering high-quality classes for everyone, the idea had the advantage of carrying the prestigious Stanford name. The forte features of MOOC are able to have mass students' intake at one point of time; it is open to anyone and assessable to anyone. Most of all it is a free course.

Connectivist Theory

Behaviourism, cognitivism and constructivism are the three broad learning theories most often utilized in the creation of instructional environments. These theories, however, were developed in a time when learning was not impacted thorough technology (Siemens, 2005). Technology has enriched the learning environment with the use of digital media and its integration into formal learning contexts causing a shift toward personalization of learning. This has led educators to question the validity of pre-digital age learning theories such as behaviourism and cognitivism. In recent years, a range of new explanatory theories has been generated that can be applied as lenses to critically view, analyse and problematize new and emerging forms of learning partially due to the limitations of existing theories.

Significant trends in learning such as many learners will move into a variety of different, possibly unrelated fields, significance of informal learning, learning as a continuous process, recognition that both the individual and organizations are learning organisms and know-where (the understanding of where to find knowledge becoming more important than know-how and know-what) (Siemens, 2005) has lead to a new alternative theory evolving .This new theory coined as connectivism is the integration of principles explored by complex self-organization theories. Learning is a process that occurs within indefinite environments of shifting core elements. Connectivism is driven by the understanding that decisions are based on rapidly altering information, hence new information is continually being acquired. Therefore, the ability to determine which information is important is vital. There are several principles of connectivism namely, (i) learning and knowledge rests in diversity of opinions, (ii) learning is a process of connecting specialized nodes or information sources, (iii) learning may reside in non-human appliances, (iv) capacity to know more is more critical than what is currently known, (v) nurturing and maintaining connections is needed to facilitate continual learning. (vi) ability to see connections between fields, ideas, and concepts is a core skill, (vii) Latest knowledge is the intent of all connectivist learning activities and (viii) decision-making is itself a learning process (Siemens, 2005).

There is no real concept of transferring knowledge, making knowledge, or building knowledge, rather the practices conducted to learn are more like growing or developing in certain ways. Connectivism is not a representational theory. It does not postulate the existence of physical symbols standing in a representational relationship to bits of knowledge or understandings (Downes, 2007). Learning, therefore, occurs at the individual level and is a product of knowledge creation through collaboration, whereas knowledge is co-created in the environment. Internalization of information is regarded then as both as an individual and a social process (John-Steiner & Mahn, 1996). For example, in social constructivist theories, learning is promoted as the principality of the individual. These theories do not address learning that occurs outside people (that is learning that is stored and manipulated by technology). They also fail to describe how learning happens within organizations (Siemens, 2005). Connectivist theory states learners derive competences from forming connections. The learners challenge is to recognize patterns which appear to be hidden or in a chaos. Meaning-making and forming connections between specialized communities are important activities (Siemens, 2005). "Sensitive dependence on initial conditions" profoundly impacts what we learn and how we act based on our learning. For example, decision making is indicative of this. Therefore, the capacity to form connections between sources of information, and thereby, create useful information patterns, is required to learn in our knowledge economy (Siemens, 2005). This new theory forms the basis and creation of the early MOOC.

Challenges and Risks

This paper does not intend to outline all of the challenges and risks faced by learners and institutions offering MOOCMOOC. However, one of the main concerns is the extremely high rates of attrition among learners that have been reported for the first generation of MOOC (Yang et al, 2013). Clow et al (2013) have characterized the pattern of attrition in MOOC as a funnel of participation. This concept of funnel is strongly related to understand how attrition happens along the way as students' participation in a course. MOOC have a high dropout rate as many learners failed to make it to the finish point due to lack of discipline, losing out and behind schedule for the assigned weekly tasks and a myriad of other reasons.

Furthermore, according to Yang et al (2013), the unique developmental history of MOOC creates challenges that require insight into the inner-workings of massive scale social interactions. Massive communities of strangers that lack shared practice in a MOOC requires enabling them to form supportive bonds of interaction, these communities usually grow in an unruly manner. While some students may successfully find the bond and support, others may find an overwhelming amount of communication having already been posted that they feel lost in. Other learners may find themselves somewhere in between these two extremes. For example, learners may begin forming weak bonds with some students when they join, however massive attrition may create challenges as a member who have begun to form bonds with fellow students soon find their virtual cohort dwindling.

On the other hand, there are risks for universities who follow the path of offering MOOC. Due to huge number of participants in a MOOC, this can work against the principle of “connectedness” in which both facilitators and participants seek (Chamberlain and Parish, 2011). Hence, facilitators need to think on “strategies of scaffolding or sustaining participation through content-heavy or less personalized topics (McAuley, et.al, 2010). Therefore, it is important for facilitators to possess a certain level of digital literacy. Additionally, the issue of accreditation needs to be addressed. Then there is an issue of payment. Do students pay for participation which seems contrary to the spirit of the MOOC philosophy? The next section of this paper narrates a learner's experience in participating in a MOOC course.

Course Description: Title “Agriculture, Economics and Nature Online”

The course began on the 2nd February 2015 for 6 weeks facilitated by Winthrop Professor David Pannell and a panel of economists in the area of agriculture, natural resources and environment in Australia. This online course is open to all with no prerequisites. There is no required text, nevertheless, recommended reading materials were provided. Course contents focused on agriculture and farmers role in society. Despite this, this course is considered not one of the more popular courses from a wide range of MOOC available.

Please refer to Appendix, Figure 1 and Figure 2 on page 8.

Course Structure

The course consist of a set of lecture videos, varies from 5 till 10 minutes in length, with a different topic for each week, as outlined in Table 1 below. Short interviews with policy makers, academic researchers and farmers were provided. Forum threads were set up to facilitate discussions among the learners with a moderator. Please refer to Figure 5a and Figure 5b on Appendix page 12 for the screenshots of online forum discussions.

Table 1: Course Outline

Week 1: Agricultural production and prices and agriculture's reliance on natural resources	
Segment 1	Course introduction
Segment 2	History of agricultural production and prices
Segment 3	Agricultural products' supply
Segment 4	Agricultural products' demand
Segment 5	The 2007 food price crisis
Segment 6	Food security
Segment 7	Resource usage 1: Land and soils
Segment 8	Resource usage 2: Water
Segment 9	Resource usage 3: Nutrients
Segment 10	Resource usage 4: Pesticides
Video	Video Interview: Kadambot Siddique, Institute of Agriculture, University of Western Australia
Quiz	Week 1 Quiz
Week 2: Resource and environmental challenges facing agriculture	
Segment 1	Water pollution
Segment 2	Pesticide bans
Segment 3	Dryland salinity
Segment 4	Resource exhaustibility :phosphorus supply
Segment 5	Resource exhaustibility :water shortages
Segment 6	Resource exhaustibility :herbicide resistance
Segment 7	Climate change
Segment 8	Climate policy and adaptation
Video	Video Interview: Michael Robertson, CSIRO
Quiz	Quiz Week 2
Week 3: The economics of agricultural inputs	
Segment 1	Fertiliser
Segment 2	Fertiliser and crop yield
Segment 3	Production functions
Segment 4	Profit maximisation
Segment 5	Building a spreadsheet to maximise profit
Segment 6	Effects of price and yield changes on optimal fertiliser use
Segment 7	Considering pollution in input decisions
Segment 8	Flat payoff functions
Video	Video Interview: David Brown, Farmer, Burracoppin, Western Australia
Quiz	Quiz Week 3

Week 4: The economics of land conservation	
Segment 1	Resource conservation in farming
Segment 2	Benefits and costs of resource conservation over time
Segment 3	Accounting for time
Segment 4	Discounting
Segment 5	Building a spreadsheet for discounting benefits and costs
Segment 6	Case Study: Conservation agriculture
Segment 7	Drivers of farmers' decision-making
Video 1	Video Interview: Mike McFarlene, farmer, Doodlakine, Western Australia
Video 2	Video Interview: Greg Shea, Department of Agriculture and Food, Merredin, Western Australia
Quiz	Quiz Week 4
Week 5: The economics of agri-environmental projects	
Segment 1	Environmental projects in agriculture
Segment 2	Extending economics beyond the farm
Segment 3	Characteristics of environmental projects
Segment 4	Benefit: Cost Analysis
Segment 5	Benefit: Cost Ratio
Segment 6	Case Study: The Gippsland Lakes
Segment 7	A helpful tool: INFFER
Video	Video Interview: Marit Kragt, Lecturer, University of Western Australia
Quiz	Quiz Week 5
Week 6: Agricultural policies	
Segment 1	Government policies in agriculture
Segment 2	Policies to support agricultural production
Segment 3	Policies for environmental protection in agriculture
Segment 4	Agricultural policy problems: Price support
Segment 5	Agricultural policy problems: Bio-fuels
Segment 6	Justifications for agricultural policy
Segment 7	Course wrap-up
Video	Video Interview: Ross Kingwell, Australian Export Grains Innovation Centre
Quiz	Quiz Week 6 & Final Exam Questions

Assessment Strategies

There was a quiz of 10 multiple choice questions (MCQs) for each week to test learner's understanding. Learners have 3 attempts for each quiz to improve their scores. A final exam concludes the course. The final exam consists of 60 multiple choice questions with only one attempt given with no time limit. The grading for the final exams is as follows: 30 correct answers for a pass grade, 40 correct answers for a credit grade and finally, 50 correct answers for a distinction grade.

My Participation: A Learner's Perspective

The motivation for many students to participate in a MOOC is to learn and to enhance their knowledge in a particular field with no exit costs for the learners. Hence, MOOC need to be able to be engaging to learners and yet be effective in achieving learning outcomes. Therefore, course design is crucial in determining learning strategies and at the outset, learning outcomes to be achieved. My main motivation in participating in a MOOC is a keen interest to enhance my knowledge in the subject matter. The fact that MOOC were delivered free meant that no payment was needed is appealing. More ever, Professor David Parnell is world renown as a professor in agricultural economics .Therefore, participating in a MOOC where the facilitator is a well known expert made it highly attractive.

The first week of participation lead to initial feelings of excitement with anxiety on my ability to follow the contents of the course. This was probably due to lack of self-confidence and a shallow understanding of fundamentals in agrarian economics. Therefore, the pressure to achieve a pass grade was considerable. My nervousness is also due to the fear of the “unknown” as this was the first time enrolling in a MOOC. I was uncertain of the how the course would be conducted (pedagogies) and was unsure of the learning outcomes to be achieved. However, thankfully, as the weeks goes by, I was able to ‘get a grip’ on the course .This improved my understanding of the subject matter tremendously while allaying my fears. One of the most important challenges when doing the course was managing my time. For every week, I had to sacrifice my time after work especially during nights to watch the lecture videos and doing the quizzes. As Week 5 drew near, I look forward to completing the 6 week-course though I was still filled with anxiety in regards to the final exam as I knew that I would only be given one attempt to do the final 60 MCQ’s.

Additionally, there was self-realisation that the questions asked in the quiz were not as easy as it seems. Students need to read the questions and answers carefully. I had scored badly for my Week 2 quiz with a score of 6/10 even after 3 attempts at the same quiz. With this new self-realization in hand, I made an attempt to read the questions and answers given more carefully and diligently. Nevertheless, after Week 4, the corresponding quiz for the week gave me a score of 9/10 at the first attempt which gave me a renewed sense self confidence to continue. Please refer to Figure 4, page 11 for screenshot of my scores for each week. At the completion of 6 weeks of the MOOC, I felt a sense of relief. I had passed the course with the total score of 51 out of 60 and with that, an accompanying sense of accomplishment. The benefits of doing this MOOC was it improved my understanding of the subject and enhanced my knowledge. A certificate was awarded for pass grades by the University of Western Australia.

Even though I completed within the stipulated time, I did face a few problems. Unfortunately, I was unable to post messages in the forum threads due to a technical glitch. I contacted the facilitator and yet, the problem persisted and I was still unable to post. However, I could read postings from other students. This was insightful because I was able to glean information which inspired me to continue despite this setback. However, because I was not be actively participate , I did not feel a sense of a real community of learners. Would I do another MOOC again in the future? I would definitely register for another MOOC in another subject. Participating in a MOOC has taught me that I need better time management strategies in excelling academically.

How this course can be better?

From a learner's perspective, one suggestion is to give a time frame to complete the final exam. A time frame would be challenging to a learner and thus, simulating real examination conditions. More ever, calculation questions would be challenging to learners. To aid learners, an additional YouTube video can show mathematical calculations on an excel worksheet on net present value (NPV) and future value (FV) of cost benefit analysis.

Another suggestion is to focus contents on cases of different regions of the world since the course focused mostly on Australia and on certain African countries only. Another suggestion for improvement is to increase the number of quizzes or to give group work assessments and/or essay type questions. Finally, activities need to be interactive and engaging to result in discussions that were interesting and lively. Activities course should be student centred that could lead to better engagement by the learners.

Limitations and Further studies

This paper is limited as it analyses the effectiveness of learning from one learner's perspective. Studies have shown that there is a paucity of research or lack of published literature on MOOC facilitator's experience and practice leaving a significant gap in the literature (Liyanagunawardena, 2013). Furthermore, much of literature has not focused on qualitative data of unacceptable behaviour (for example, forceful intellectual debates, feeling of participation being demanded and rude behaviour) from MOOC participants which has led other participants to cease posting on forums (Liyanagunawardena, 2013). Therefore, this is another avenue for research in the effectiveness of MOOC.

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Appendices

Figure 1: Screenshot for the Course Description

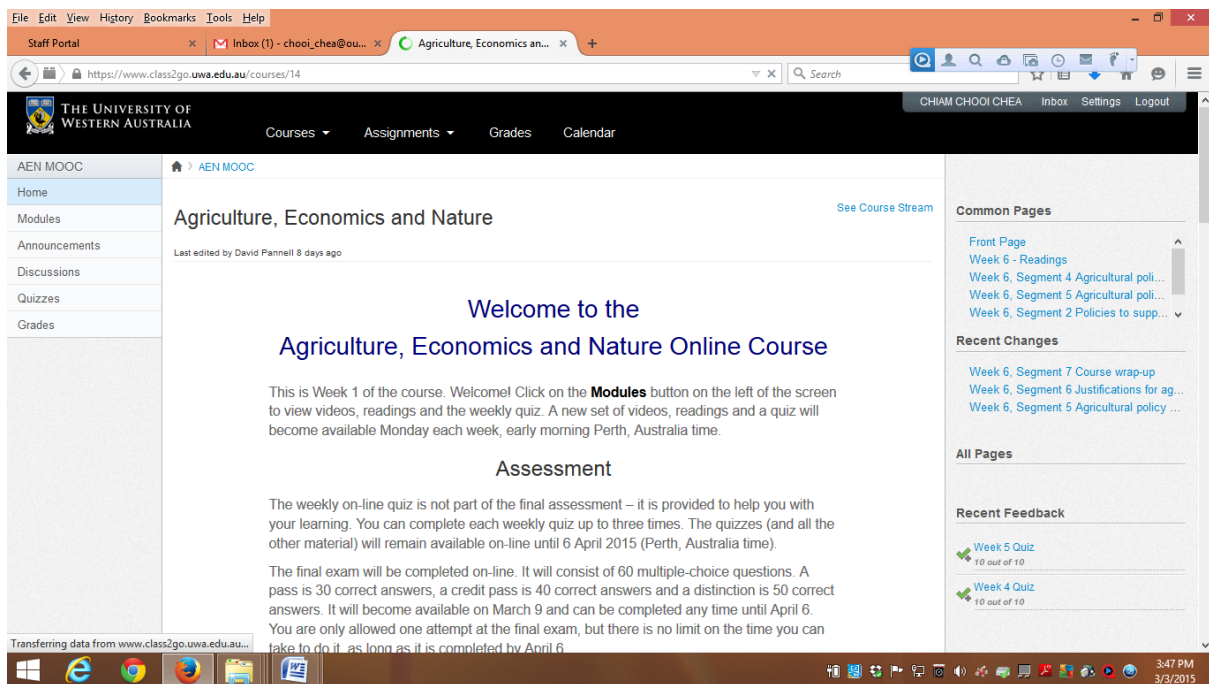


Figure 2: Course Modules

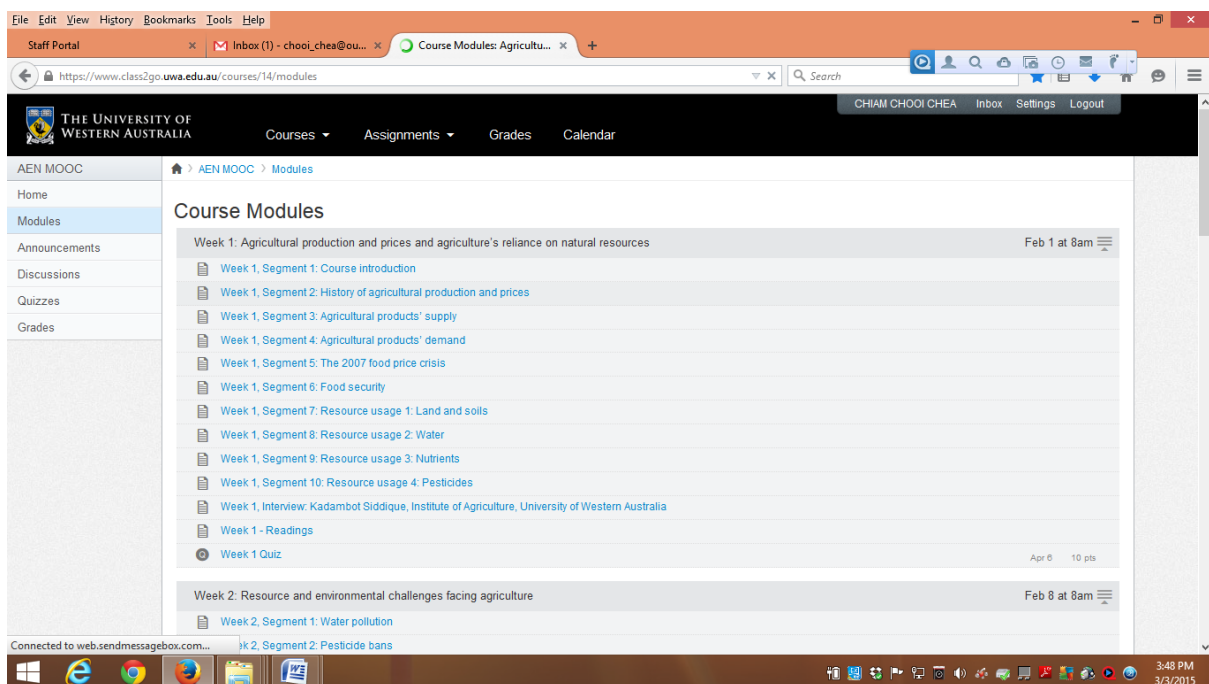


Figure 3: Screenshot on the quizzes for each module

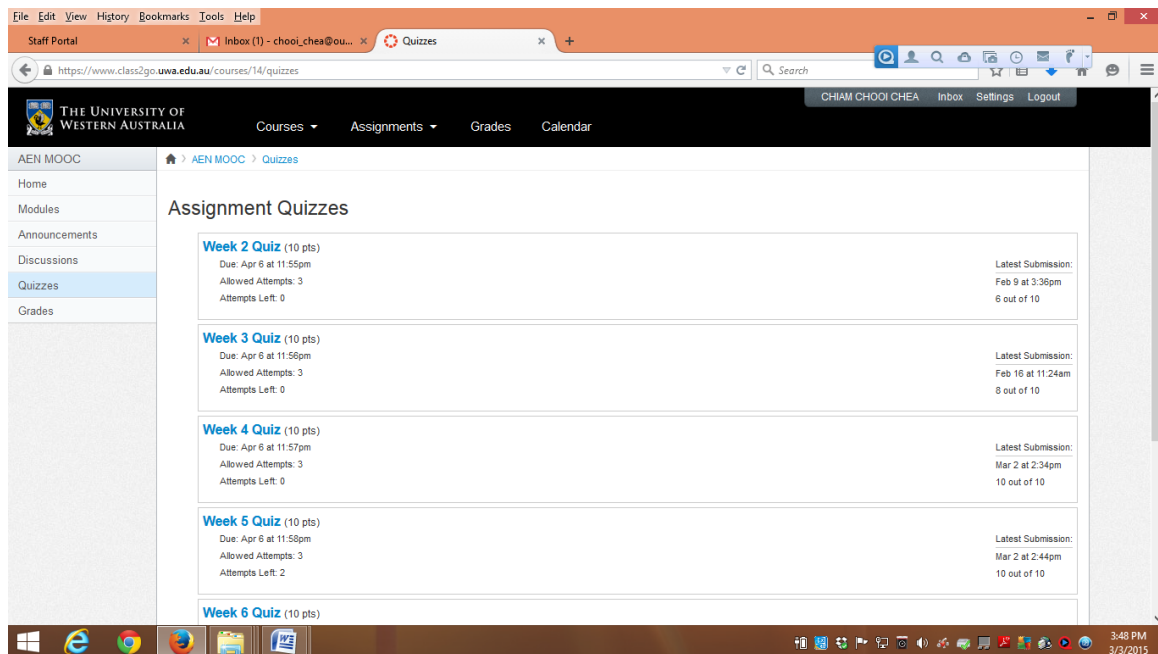


Figure 4: Screenshot for quizzes results

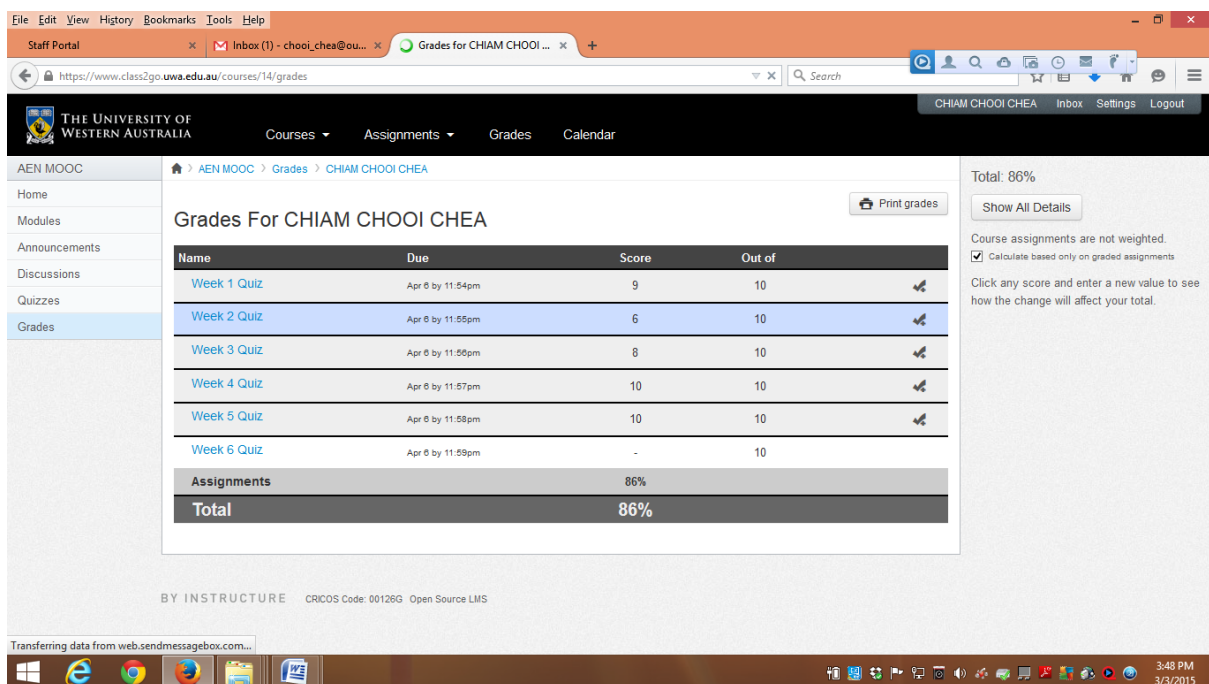


Figure 5a: Screenshot for threaded discussions

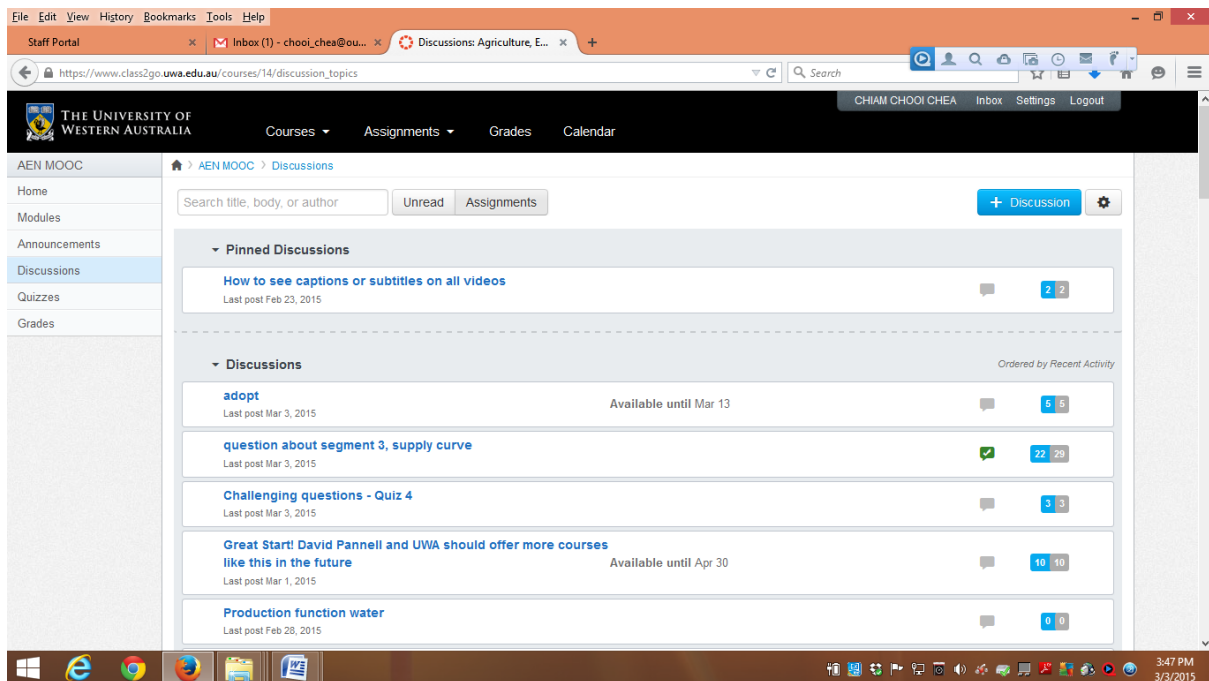
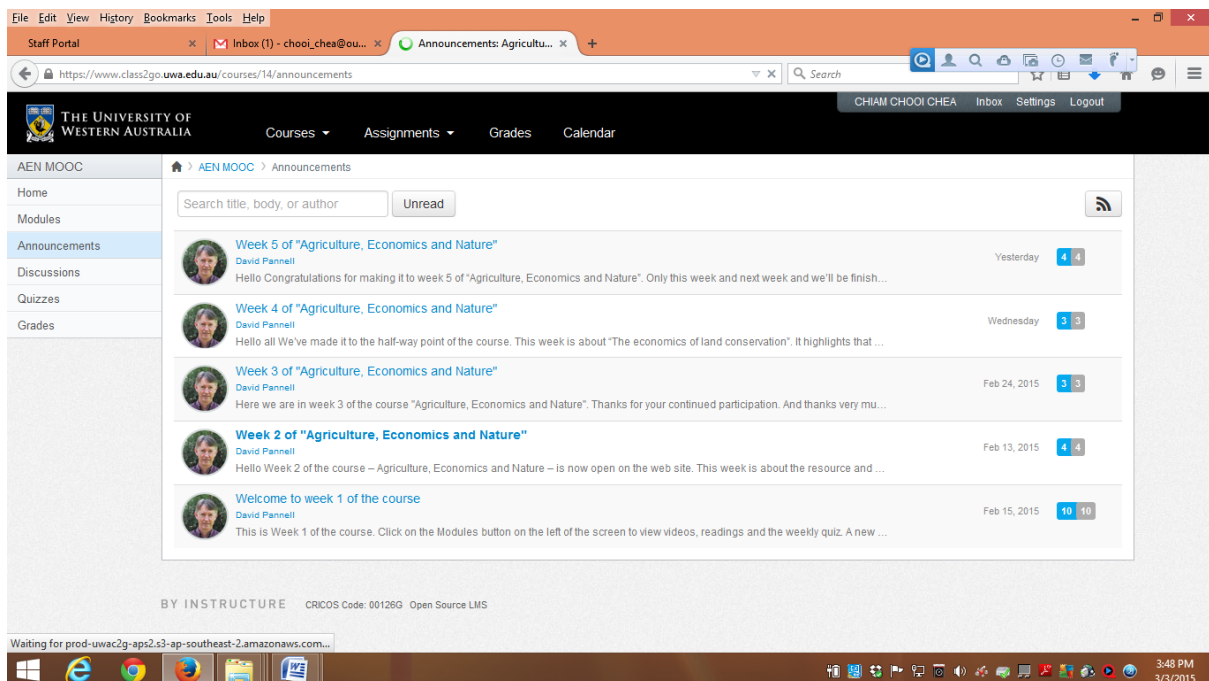


Figure 5b: Screenshot for threaded discussions



MOBILE MICRO-LEARNING: A NEW STYLE OF OPEN AND DISTANCE LEARNING IN THE AGE OF MOBILE INTERNET

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Abstract

With the rapid development of wireless communication technology, mobile computing technology, mobile new media and smart mobile terminals, the open education mode is also quietly shifting from E-learning (Electronic-learning) to U-learning (Ubiquitous-learning) driven by emerging information technology. In this paper, the characteristics of open education and the advantages of mobile micro-learning such as flexible, elastic, efficient, fragmented, multimedia and interactive to build a new way of open learning that is consistent with the development idea of open education: Anyone uses Anydevice Anytime and Anywhere to learn Anything. Mobile micro-learning can meet the demands of open education learners for dynamic and interactive learning, which makes full use of educational resources to improve learning efficiency, and organically combines new technologies and open education modes.

Index Terms: *Electronic-learning, Ubiquitous-learning, Informal learning, Adult learner, Fragmented, Mobile-Learning, Micro-learning, Mobile Micro-Learning*

1. Introduction

In the world today, open education has played an increasingly important role in adult higher education in more and more countries and has become an indispensable part in the national education system. It makes more emphases on independence and openness and pays more attention to autonomy and freedom.

With the rapid development of computer network technology, cloud computing technology, wireless communication technology, mobile computing technology, mobile new media and smart mobile terminals, the distance learning modes of open education are constantly innovative, and new technology makes more clear teaching idea of open education to break limits in space, time and subject, therefore open education is the product of distance education to adapt to the information society development. Promoted by information technology, open and distance learning modes are constantly innovative and gradually develop from E-Learning (Electronic-learning) to U-Learning (Ubiquitous-learning): Anytime, Anywhere, Anyone, Anydevice and Anything, increasingly close to the ideal original intention of open education.

2. Characteristics of Open Education

Compared to traditional education, open education is not only an education form but also a philosophy of education, which makes full use of social educational resources, modern educational technology and flexible learning support services to provide all people that have the desire to learn with learning conditions and good learning environment without time-space restrictions. Scholars generally believe that open education has the following basic characteristics: learners and learning are centered; there is no learning space restriction with information means for remote teaching; everyone can learn, without enrollment threshold; adult lifelong education is the major; learners have autonomy to select learning content, learning progress, learning media, learning mode, learning time and learning environment; multi-media teaching materials and modern information technology means are used in teaching [1].

3. Problems in the Development of Learning Mode of Open Education

3.1 Problems Faced by Adult Learners

Audiences of open education are mainly adults, which are the biggest difference of open education from other educational forms. Adults have clear learning objectives to acquire appropriate and useful knowledge and solve problems. Adult learning is self-directed. Learners develop teaching objectives and select learning content according to their own needs and select and control the learning mode and progress and complete the learning task according to their cognition degree. Adult learning basically follows the principle “effective, pragmatic and practical”, and adult learning is not to prepare for the future work, but to solve practical problems encountered in the work[2,4]. More often, adults undertake more social roles, and their learning is often disturbed by work and life, so they pay limited time and efforts in learning and have low learning efficiency.

3.2 Limitations of E-Learning

The mission of open education is to break the limitations of learning in physical space and expand learning dimensions. Thus open learning is based on distance learning, making learning activities extend to all space and time in social life. This makes open and distance learning closely related to information technology, and the level of information technology determines the dimension and breadth as well as the mode of open and distance learning. The past PC and Internet-based E-Learning modes expand open education to a certain extent, but in the face of increasingly fast work and life pace, adult learners have less and less chance to sit in front of PC and rely on the Internet for formal learning according to time, volume and plan, and the learning effect cannot meet their demands to timely access to knowledge and address practical problems. Another problem of E-Learning lies in the requirements of learning environment. Restricted by PC and wired network, it is impossible to acquire knowledge and solve practical problems anytime and anywhere in actual work and life.

3.3 Deficiency of Formal Learning in Open Education System

In many cases, specific to adult learners of open education, formal learning with a clear plan and objective has not been adaptive to the requirements of human society that makes rapidly progress to acquire knowledge. Because formal education emphasizes the systematic and planned learning and adult learners are to relearn the existing knowledge and experience, the knowledge they need may be short and accurate and they may precisely obtain knowledge and skills and realize the value at any learning time and place through a variety of ways, that is, fragmented learning. Learners are self-initiated, self-regulated and self-responsible to use fragmented time in fast-paced work and life to acquire useful fragmented knowledge, which cannot be achieved by formal learning. Fragmented learning can integrate learning with work and life, and it has great elasticity and flexibility in learning time, learning content, learning objective and learning environment.

4. Mobile Micro-learning

4.1 About Mobile-learning and Micro-learning

4.1.1 Mobile-learning

The article on distance education “From d-learning, to e-learning, to m-learning” by Desmond Keegan, an Irish educational technology specialist, is supported by numerous scholars, and the concept of mobile learning has been known ever since. Mobile-Learning is a learning activity through wireless communication network anytime and anywhere that is supported by mobile computing terminals. Mobile computing terminals used for mobile learning quickly and vividly show learning contents to learners, and allow communication and collaboration between teacher and learner and between learner and learner[3].

4.1.2 Micro-learning

Micro-learning was first proposed by the Austrian learning researcher Lindner, which is a new way of learning present in the new media ecosystem and based on micro-content and media. The media push micro contents, which greatly reduce the learner's cognitive load. This way of learning is based on fragmentation, emphasizes timely interaction, and pushes knowledge as required[5]. At present, global mobile Internet and mobile computing devices have been well developed, and IOS, Android, WP and other mobile ecosystems have been closely integrated with people's work and life and has become the material basis for the emergence and development of Micro-learning.

4.1.3 Problems of Mobile-learning and Micro-learning to be resolved

There are some noteworthy problems in the development of Mobile-learning and Micro-learning: (1) The existing traditional learning resources and forms of E-Learning need to be transformed to meet the needs of Mobile-learning, that is, fragmentation of audio and video resources. It changes the entire teaching audio and video into micro audio and video that is suitable for Micro-learning and suitable for mobile computing terminals to play. It changes the teaching text, online communication, exercises and tests into the interface and form that are more suitable for mobile devices. (2) Mobile computing devices, mobile operating systems and learning software need to be miniature so that mobile computing devices are more portable and easy to use and the learning process is more simplified and faster. (3) Micro-learning requires rapid spread of ecosystem of mobile Internet, mobile computing terminals and mobile new media. Without mobile hardware and software environment and support by mobile learning App or with too high cost, Micro-learning cannot timely deliver the learning content to learners, who cannot interact with teachers in time.

4.2 *Mobile Micro-learning*

After the problems stated in 4.1.3 are solved, Mobile Micro-learning is produced when people use mobile devices to learn timely as required. It is the organic combination of mobile communication technology, mobile computing technology and modern forms of open learning, which greatly improves people's learning efficiency and autonomy, so it is an ideal state of informal learning. It can be said that Mobile-learning is a means and Micro-learning is a connotation. Mobile-learning emphasizes the mobility of learning mode, Micro-learning emphasizes the miniature learning content, and the effective combination of them can give full play to their advantages, so Mobile Micro-learning is the product of the combination.

4.3 *New Features of Mobile Micro-learning*

(1) Mobile features of Mobile Micro-learning can meet the learning needs of learners in any state. (2) Micro features can facilitate learners to make full use of fragmented time for learning. (3) The ubiquitous and interactive truly realize the ideal of learning on demand. (4) Modular learning content allows learners to learn relatively brief content within a limited period of time, that is, the learning content is divided into a number of independent, short and interlinked knowledge modules. Through the integration of content form and technical means, Mobile Micro-learning exactly meets the ubiquitous learning development of open education [6].

5. Mobile Micro-learning – A New Way of Open and Distance Learning

5.1 *Mobile Micro-learning Conforms to the Development Trend of U-Learning of Open Education*

According to the foregoing, U-Learning is the future trend of open education. With technical supports by prosperous development of today's mobile Internet ecosystem environment, the mobile, miniature and ubiquitous features of Mobile Micro-learning meet the needs of U-learning of open education that Anyone uses Anydevice Anytime and Anywhere to learn Anything.

5.2 *Mobile Micro-learning Conforms to Learning Habits of Adult Learners of Open Education*

Mobile Micro-learning exactly meets the learning needs of adult learners of open education. For adult learners, their learning needs, interest in learning, formation of learning motivation and selection of learning content are largely based on their own work and life. They have strong learning autonomy and need no planned formal learning, but they solve practical problems in the fragmented learning period to accurately obtain useful and missing knowledge fragments, and use the existing experience for re-education and re-synthesis so as to achieve a complete knowledge system. Furthermore, Mobile Micro-learning makes up adult learners' disadvantages of work and life pressure, limited time and energy, and impossible learning of complete knowledge, integrate parts into a whole, and achieves a mechanism for lifelong learning through continued modular learning anytime and anywhere[2]. Mobile Micro-learning achieves application of knowledge and flexible learning and use, so micro-content and repeated memory is an effective way to encourage adult learning.

5.3 *Mobile Micro-learning is an Innovative Technical Means Breaking Limitations of E-Learning in Open Education*

As mentioned above, the conventional distance learning is subject to heavy PC devices, wired network environment, complex operations, etc., sustained and effective learning is impossible in a variety of complicated states of work and life. But with the rapid development of wireless communication technology, mobile computing technology, mobile new media and mobile smart terminals, Mobile Micro-learning is progressing from concept to application implementation. On January 21, 2015, the latest report released by market research firm TrendForce showed that the delivery of global smart phones reached 1.167 billion in 2014, far more than PC, and more than two fifths of Internet traffic was from the mobile Internet[7]. The change in the new technology-based way of learning provides a series of opportunities, and Mobile Micro-learning is a new way of learning in the era of mobile Internet.

5.4 *Mobile Micro-learning's Informal Learning Mechanism will Become an Important Part of Open Learning Education and Play an Important Role*

With the rapid development of information technology and progress of society, the amount of knowledge of human society has increased rapidly, and knowledge development and updating accelerate greatly, so learning must be throughout life. Learning is no longer just the task of school-age children, but has become a lifelong thing everyone must engage in and a way of life. Open education used to have a mechanism of formal learning similar to traditional classroom teaching, and adult learners also accept the teaching of systematic knowledge on time and according to plan like the school-age students. But adults are often disturbed by work and family, so they have limited time and energy in learning. In this case, the existing mechanism of formal learning of open education cannot meet the learning requirements, so Mobile Micro-learning is needed to achieve the fragmentation of lifelong learning. At the same time, this learning mode is more consistent with adults' learning habits and learning environment, and the short, frequent and fast knowledge push and timely interaction stimulate interest in learning.

6. Challenges to Mobile Micro-learning of Open Education

6.1 Challenges to Client System Design of Mobile Micro-learning

Since Mobile Micro-learning more uses C/S architecture and takes all types of smart mobile devices as learning platforms and resource carriers, the following features should be stressed in client system design: (1) Readily excite and maintain learners' attention. Since learners' attention may scatter during informal learning, learners should be provided with various types of learning resources, such as text, video and audio as well as Flash to meet the diverse needs of different learners to enable them to choose the right learning resources as needed. (2) Reasonably divide knowledge content modules. Since Mobile Micro-learning can occur anytime and anywhere, learners are in a mobile state of learning, and their attention tends to disperse. Therefore, in the design of learning resources, the content should be divided into relatively independent and complete miniature modules, and the key and difficult content should be refined and highlighted so that learners can complete learning and achieve good learning results in a relatively short time. (3) The learning design should highlight the interaction and collaboration, and emphasize timely interaction between teachers and students as well as collaboration and exchanges between students, so various forms of interaction and collaboration can be designed to complete the learning task. (4) The client interface should be simple and intuitive. Limited by the size of the mobile terminal screen, the interface should have concise text and short title, and achieve timely feedback in interactive and collaborative learning, for this helps learners to participate in thinking, stimulate interest in learning, and improve learning efficiency.

6.2 Challenges to Micro Curriculum Resources Development

Mobile micro-learning is essentially to present micro curriculum resources to learners through mobile terminals, so the following principles should be emphasized in resources development: (1) The principle of adaptation: the equipment terminals for Micro-learning are generally smart phones and PDA, whose display screen is generally small, therefore resources, pictures and videos should be adaptive to popular devices, and encoding formats should be compatible. (2) The principle of coherence: Micro-learning is controlled by students, micro resources are fragmented, and learning content is not coherent, so the Micro-learning resources should be coherent and serialized to help learners to integrate a complete knowledge chain. (3) The principle of objective: Micro-learning often occurs at the site to solve practical problems, so the learning content should be categorized by theme to improve learning objectives so that students can complete learning on demand[8].

6.3 Challenges to Application Environment

Mobile Micro-learning supports wireless connection, but it has certain requirements of the performance of mobile smart terminals and the mobile network rate. For example, a 720P micro-video requires decoding capability of terminal devices as well as local 3G/4G wireless network or WIFI network environment. It is an obstacle in the countries or regions with general economic conditions so that learning cannot be carried out properly until local social progress and economic development.

7. Conclusion

The shift of open education from E-Learning to U-Learning is both the development trend of open education itself and the embodiment of integration of information technology and open and distance learning innovation. U-Learning can highly integrate learning, work and life and have great flexibility and elasticity in terms of learning time, learning content, learning objective and learning environment, which are the main characteristics of open education different from other educational types. Based on wireless communication technology, mobile computing technology, mobile new media and smart mobile terminals, Mobile Micro-learning achieves U-Learning of open education. Mobile Micro-learning faces adult learners, the most important objects of open education, and depends on its flexible, elastic, convenient, timely and accurate advantages to provide a lot of fragmented learning

opportunities and learning content to open education learners, reducing learners' burden of learning and stimulating their interest in learning. Mobile Micro-learning is an innovation in the combination of means and content of open and distance learning, the integration of emerging information technology and open education philosophy in the era of mobile Internet, and the learning mode to achieve U-Learning of open education. Despite some challenges, it will inevitably become an important part of the distance learning mode of open education.

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DEVELOPING BASE EDUCATION FOR MARGINAL COMMUNITIES THROUGH E-LEARNING BASED EDUCATION MODEL

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Abstract

The UNESCO Policy forum held on 2014, 20 November in Bali ICDE conference presented the theme entitled “Ensure Equitable Quality Education and Lifelong Learning for All by 2030”, has been the main agenda in the Global Education Program of ICDE-UNESCO. This indicates that: “The Leadership Challenges in Open Education Model Approach to Success”, will turn out to be the priority to support the education equalization for all human beings. The education equalization that has been widespread, successful, and quite well developed is Open Education model for College (Open University). The leaders of higher education also recognize that the access to education equity and quality should serve as the global education agenda principle of post-2015 era, in which this also becomes the motto of The 29th AAOU Conference held at Kuala Lumpur proposing the theme of “New Frontiers in Open and Distance Learning (ODL)”. Starting from such a situation, it is necessary to study the possibilities to organize e-learning based and breakthroughs “Open Education” for school- and adolescent-age groups, i.e. those belong to elementary to high school ages, particularly among marginal community groups. They should become the top priority targets to access the kind of “Open Education” model. The marginal community aforementioned involve those inhabiting river banks, under-bridge area, waste disposal points, market area, and street groups, in which they have no awareness on the importance of education. This also includes urban fringe community inhabiting suburbs and those residing “remote villages” and “under-developed villages”. Most of them do not also have adequate financial capacity, and hence, they only think about how to survive to live and do not have adequate concern. Therefore, providing education for them is urgent and ask to be picked up ball, the minning of we are to proactif visit to them for teach with very short distance. We are given the grouping lesson conduct and it covers those living at distance places that cannot be manually accessed. This will be solved when it is carried out by using “e-learning” model. Tis education for marginal groups should be performed as soon as possible since education is a highly strategic, accurate, and effective way to change the mindset of an individual and ultimately also the lifestyle of the society. Their intellectual and social progress development will be formed by their education and hence, they will be able to become good actors of life or good, ell behaved, reasonable, normal, and characterized “homo homini social” and “homo sapiens” person. It is expected that the greater number of the communities will be able to change the world order since it involves human beings of positive charactes. The school- and adolescence-age individuals have golden opportunity to access highly effective development and education. This will prevent them to become wrongly-educated adults. Uneducated young human beings would potentially turn out to be adults with wrong personality and may become the destroyers for their environment, either for hhim- or her-self or for the society at large. Therefore, it is very huge the positive effect that we will obtain when the education for marginal communities becomes the top priority in the AAOU program, which will be simultaneously and thoroughly conducted in developing countries to immediately solve the prolems of ignorance and social degradation. The qualified “Open Education” model for this marginal groups is expected to be a solution for the poor development of education in developing countries such as in Indonesia. The ICDE motto “Education for All”, indeed, will come true, i.e. the educated condition of all layers of the society, and hence, all people in the world will turn out to become improved and qualified individuals.

Key words: Open Education, marginal communities, school-age individual, e-learning

Introduction

A. Background

One of the Unesco survey result stated that education is the main foundation in building human civilization and the civilization of a nation, but it was not as easy as we say in making them. If we want to be able to more easily and more quickly is a must held jointly or in synergy of multiple stakeholders and policy makers. As a concrete example that a community structure is formed from certain domain / aspect of life that is based on social and welfare, education, health, behavior, and civilization, in terms of growth / increasing population is something that should be considered by the leaders of the nation and the State.

Under these circumstances, it is argued that in order to be able to change the structure of the lower communities in order to become a more civilized society and one of them is through the quality of education. In the process of education and alleviation low (marginal) can not just be done by one of the stakeholders but from different stakeholder which of the various components, why?. It is because people at the same time doing the activities of the various domains of life. From the social environment activities, work activity, of a way of life, healthy or not, from the aspect of life intent biological/fertility, they can act with reasonable ethical and moral basis or only controlled by instinct alone or in hedonic alone, and not in terms of their education educated properly. According to Selo Soemardjan (in [www.septianhara.com/paper for social change](http://www.septianhara.com/paper-for-social-change)) on social change, "that social change is a change in the society that will affect the social system, including the values of attitudes, social attitudes, and behavioral patterns of a community group. Then, Gillin and Gillin ([www.septianhara.com/paper for social change](http://www.septianhara.com/paper-for-social-change)) said that "Social change is the change that occurs as a variation of a way of life that has been accepted because of changes in geography, culture, composition of the population, ideology, and the diffusion of education or new discoveries in the community."

From the perspective of the theory and the process of education above is expected to make the occurrence of a change of various aspects of life, namely the change of civilization, cultural change, social change, and improving the quality of the intellectual. With synergistically education is expected to have diffusion and innovation in one's personal, ie by a process in which new ideas are communicated and disseminated to the social system and the education system and the new ideas that have a positive impact. (Diffusion of Innovations, Everett M. Rogers, 2003). Education is an absolute requirement of developing a civilization. Without adequate education holistically and comprehensively there will be no human resources is developing well.

This paper want to emphasize the problem of education for the marginalized or the poor and marginalized. The progress and development of a nation will be measured by the level and quality of its human resources (HR) owned by the nation. Education is one of the key tools and highly effective for the prevention of a variety of backwardness or ignorance, which in turn will be able to overcome poverty. As a matter of fact is still a lot of fools and do not attend school only for reasons of poverty, especially in developing countries such as Indonesia, where the number of them is large enough that it will affect the situation in the country. In this case the Indonesian government has actually been tried in various ways so that all poor people have the opportunity of education such as lack of funds "School Operational Assistance" (BOS) and the program as Family Hope (PKH), which is still rolling, but whether it has been a solution equitable education funding for the poor? We can see together that turns the distribution of these funds is still a lack of proper funding target, why?. As it turns out in the field is still a lot of manipulation going on the practice of use of the funds, which acquire the flow of these funds are schools that have been able and most of the students are not poor. Poverty negative impact on the direction of change in the lives of children, ie inhibition of the development of physical, mental, and moral as well as intellectual. Children of poor families residing in slums and poverty complexes such as the periphery river, suburban railway tracks, and trash area are those marginal areas that require special handling .. They are a group that is less attention and at

the same time a solution how to make them become educated so that no potential to become perpetrators of various forms of criminal acts seeds.

It is a must strive to change the paradigm of life for all mankind besides that humans need to eat to live, but also that man lives a meaning in life. Human life is to live with each other for all the habitat of the universe, for that it is necessary for the process of understanding correctly in the mindset of every human being that man can not live without the universe and everything in it. Human beings are not "*Homo homini lupus*" but "*Homo homini socius*" and "*Homo Sapiens*" means that the man is a friend of another man, intelligent man, man becomes a friend of another life, a friend of all existing habitat, and become involved in the ecosystem harmonious for all life.

B. Issue Formulation

From the above ideas, it can be said that the complexity of the impact of the problem of poverty and ignorance associated with the problems of life in Indonesia. Therefore, limiting the issues to be studied specifically is about the importance of the problem of education for marginalized communities. The issue is formulated as follows.

"Why Education for marginal groups is very important and urgent, especially in school-age children / adolescents?"

With the provision of early education to them, hopefully our young generation will be inevitable from a wide range of behavior disorders social, ethical, moral, mental, and intellectual, as early as possible in order to anticipate the development of criminal acts that often and mostly done by marginal groups.

C. Objectives and Benefits

1. Purpose of the paper

In accordance with the restrictions on the above issue, the purpose of this paper is to provide inputs and thoughts or ideas in order to improve and consider the various policies, especially in the handling of education, poverty alleviation, and the implementation of earnest effort for the acquisition of education for school age children / teens in the marginal groups.

2. Benefits

This paper is expected to bring benefits, especially for policy makers and governments on the importance of cooperation and collaboration between the various ministries, namely the Ministry of Education, Directorate General of Population and the Ministry of Health in order to cope with the growing number of people in marginalized groups of reproductive age who tend to be large proporsinal and potentially negative. Indonesia has been under emergency conditions (urgency) education, so that one of them is the need for handling simultaneously, together in one room and it goes hand in hand. Coincidentally, through a model of Open Education.

Theoretical Basis

According to Ki Hajar Dewantara, Indonesian National education leader, said that: "Education is an effort to promote the growth of character, mind (intellectual and character) to the students so that we advance the perfection of life, the lives and livelihood of children who are educated in harmony with his world"(1977: 14). In accordance with the Law no.2 of 1989 of National Education system is reinforced role in Republic Act no.20 of 2003 on the national education system as set forth in article 34, which read as follows:

1. Every citizen over the age of 6 years can join the program compulsory.
2. Government and Local Government shall ensure the implementation of belajar minimal on basic education free of charge.
3. Compulsory education is a state responsibility held by educational institutions, government, local government and community.
4. Provisions on compulsory referred to in paragraph (1), paragraph (2), and paragraph (3), shall be further regulated by Government Regulation.

Moreover, in the preamble of the Act of 1945 to include national education goals that; Education aims to educate the nation that constitutionally translated into the '45 Constitution paragraph 31 subsection (1), states that every citizen has the right to education *** and paragraph (2) that every citizen is obliged to follow basic education and government *** required finance.

Education is a very urgent and essential to a nation, due to the development and progress of a nation is determined by the quality of the man in the nation. So education is key in combating the ignorance that results in poverty. Less inequality in educational opportunities in Indonesia cause low education rankings on the scope and level of Asean International. Then education personnel and other technical personnel education ie. in terms of health, population, this is very instrumental in the success of a process of eradication of ignorance and welfare. Their education on how the quality of human life and the system made / created in order to carry out the tasks of teaching and education in the share issue.

This is similar expressed by Suparman (Desain Instruksional Modern, 2012: 2), he says that ... "systemic process in building a system of learning (instructional system) effective and efisien. Proses is normally performed by lecturers, teachers, lecturers and trainers, hereinafter referred to teachers or personnel who work specifically as an instructional designer. Moreover, Soenarwan, (System Approach in Education, 2001: 60), said that "the importance of learning to see the education system with the" new glasses "and think in a different way".

With the education there will be changes in the group - a group of people, both in terms of social, values attitudes, intellectual, and behavioral patterns of individuals in the communities where they live.

Discussion

1. Poverty VS Education

Poverty in Indonesia is still quite high, according to Replubika.co.id (2015), predicted approximately 12.25% of the total population of Indonesia so about 30.25 million people. In the year 2011 based on data from BPS is still around 11.25% so there is an increase in poverty by one percent. The structure of Indonesian society there are three groups, the top group (rich) there is about 20%, 40% intermediate group, the lowest class is also about 40%.

Judging from the condition mentioned above, it should be recognized along with that to alleviate the poor that 40% is not an easy job; it requires tremendous effort and to be with were full and simultaneously (exercively and coincidently).

The foregoing occurs partly because many government programs are still on target to become the cause of poverty and ignorance is not fast up to expectations, The government should immediately seek specialized treatments so that they (the poor and underdeveloped education) want to encourage their children to get educational services.

How can the system be built? In this case the author tries to create a model scheme basecamp in the group in which they live, such as what will be offered to the government as a new policy in alleviating poverty and ignorance by providing proactive education system is the establishment of the model of education camps they are a group basis. For example in a family group made a camp scavenger education, especially for children ages preschool, elementary and junior high school. Also on the edges of the river group also formed the same camp etc ..., which is used as learners are those who have not been accommodated formal school in elementary schools or junior high school. For children who have been accommodated in the formal school let free to continue with the government financed through the BOS.

Then who are educators?. Educators are volunteer workers offered to new graduates of any department interested in the eradication program of education and also undergraduate education has not become employees / civil servants. What about fees for them? Honor can be allocated through funds and keeping ministries directly related to education ie. which is 20%. Education funds (BOS), which has been distributed to schools belonging to middle and upper schools should be diverted to fund the alleviation of poverty and ignorance for the marginalized communities. And further funding from the ministry collaboration on issues related to health, population, and social minister.

2. Collaboration between the Ministries

Why is collaboration?. As reported by Reuters online on the date 01/15/02, it is said that the government will create a new scheme to alleviate poverty. The government said that the development in eastern Indonesia will menjadi priority, but according to the authors emergency education for marginalized communities are located in all areas - suburbs and underdeveloped villages in the region of all the cities in Indonesia. The need for social services related to the increasing number of population, education and health. The importance of education on the subject of controlling population growth is less balanced with economic progress so that the community can live in prosperity and social life is well ordered. Therefore, it is necessary to be coincident cooperation means an activity carried out in the same time, to achieve one goal and occurs at the same spot and in one space. In this case it means in terms of finance also will be lighter because it is supported by the three ministries. Technically, each material from the three ministries will be delivered at the same time, in the educational process which includes three interests, namely to eradicate ignorance, poverty reduction by educating become productive human, humans make moral and character, and from the health ministry to educate in order not to commit irregularities wrong sexual behavior and knowledge about the problems of fertilization in order to have the descent is controlled by the ripe old age and on a healthy life.

Expected through an integrated didactic process with the three ministries mentioned above will be able to form a homini human homo socius (human friendly with another man) and Homo sapiens (human intelligent and virtuous), being reasonable human behavior and mental health so do not tend to behave in a potentially criminal act because of lack of knowledge and mindset dominated by instinct instead of common sense.

Conclusion

From the above ideas it can be concluded that the collaboration activities with the paradigm of thinking and acting to effectively and efficiently as possible can be done in order to generate maximum cost savings. In this educational process of how we are trying to generate the effectiveness of a goal with a process that is 'cheap' but to obtain a good result and with good process anyway. Some problems of efficiency of education in Indonesia is the high cost of implementation in the field of education and not a secret anymore for the general public that these funds are often unclear allocation of funds.

As a solution that can be done so that education can still run well are:

1. systemic solution, namely a solution to fix the existing system social system related to the education system.
2. Technical solutions, ie solutions concerning technical matters as it has been gave at the top with regard to the ways in which the educational process in order to run efficiently is by way of collaboration in an integrated manner so that a solution can be resolved simultaneously. For the beginning there is usually a / experiencing difficulty in the form of learning and its implementation can be considered together from various ministries mentioned above. How the technical implementation and the process of education and teaching aids, and so forth, how the target can be achieved and poverty reduction objectives and ignorant can indeed become a reality

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DEMOCRACY AND THE CHALLENGES OF EDUCATION IN INDONESIA: UTILIZATION OF ICT AND ODL TO IMPROVE PUBLIC INTEREST READ

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Abstract

Indonesia, today, ranks fourth out of the top five countries in the world in terms of population. The population of Indonesia in 2014 amounted to 244,769,000 people. With a large population, education is a major issue that must be managed properly. However, it turns out, it was not envisaged. If the data refer to the Education Development Index (EDI) in 2011, Indonesia is ranked 69th, Malaysia at position 65, and Brunei in position 34. Based on these data, it can be stated the development of education in Indonesia is still lagging behind, when compared with countries other developing. In fact, education is very important for the life of a nation. Reciprocation of a nation, one measure of the quality of education. Democratic era, which followed, the rapid progress in the field of Information and Communication Technology (ICT), should be able to be a reliable means to improve the quality of education. Democracy has room for every community to get their rights and voice their aspirations, while ICT has an advantage in terms of affordability. In the era of democracy and respond to ICT development, the Indonesian Government has made an important breakthrough, the permissibility of the college in addition to the Open University, to conduct distance education (ODL). This policy, one of which is intended, in order to encourage more and more people accessing education. However, the results are not significant, nonetheless index education levels Indonesia is still low at 14.6 percent, in contrast to Singapore and Malaysia already has an index that better education levels are 28 percent and 33 percent. This paper discusses what factors causing the low quality of education in Indonesia compared with other developing countries. When linked with the culture of Indonesian people who prefer to hear and speak, rather than reading; whether this culture affect the delivery of education? How to answer the challenges of the democratic era. Can ICT and ODL system is used to change the culture of Indonesian society into a society that enjoys reading?

Keywords: *Democracy, Information and Communication Technology, Distance Education*

Introduction

The occurrence of democratization in Indonesia since 1998, has provided new opportunities for the education sector to play a greater role in generating qualified human resources. Democracy is believed to improve the welfare of the community, and democracy is also believed to be the only way to increase equality among human beings. Through democracy, the right of every individual to achieve compulsory education met the state. Everyone, no exception, have equal opportunities to education. Democracy becomes the entry point for citizens to fight for equality in education, so that education is not exclusive, it can only be reached by the elite or those who have big resources. Democracy can encourage the government to conduct educational evenly spread. Therefore, through democracy, the hope is obtained, the quality of human resources becomes a reality.

The quality of human resources can be generated, if the state can organize quality education. Quality education, measured by the ability to actualize three fundamental human dimension: first, affective, which is reflected in the quality of faith and piety, ethics and aesthetics, and good character; second, cognitive, which is reflected in the capacity of thought and the power of intellect to explore science and develop, as well as mastering the technology; and third, psychomotor, which is reflected in the ability to develop technical skills and practical skills (Depdiknas, 2005).

In the era of democracy, in the context of realizing quality education at the national level, the State has issued policies to improve the quality of education through the Standar Nasional Pendidikan (SNP). SNP consists of content standards, process standards, competency standards, the standards of teachers and education personnel, facilities and infrastructure standards, management standards, financing standards, assessment standards of education. The standard is used, ranging from early childhood education, elementary education, secondary education, non-formal education, to higher education (Dekdiknas, 2005). In addition through the SNP, the state also responded to improving the quality of education by expanding the coverage of education through a system of Distance Education (ODL) and the development of Information and Communication Technology (ICT).

Likewise, the implementation of ODL can now be made by the college in addition to the Open University, according Permendikbud no. 24 of 2012 on the Implementation of Distance Learning (ODL) by the College. With the expansion of these opportunities, methods to deliver learning materials and knowledge is increasingly diverse and growing. Similarly, the development of ICT facilities, especially for coverage internet. The regions also increasingly responded to the use of the Internet for education. Referring to the data Ministry of National Education, in response Internet use for education be extended to areas outside of Java, including the island of Sumatra, Bali, Kalimantan, West Nusa Tenggara and East, Sulawesi, Maluku and North Maluku, Papua and West Papua, although the island Java is still ranked the highest at around 68 percent.¹

However, although the country has made important policy to improve the quality of education, the results have not improved significantly. At the macro level, one of which was reflected in a comparison of the Human Development Index (HDI). In ASEAN, Indonesia is still ranked far below several other ASEAN countries, including Singapore, Malaysia, Brunei Darussalam, Thailand and the Philippines. ASEAN countries have the highest HDI among ASEAN countries with 0.895 is Singapore (ranked 18 in the world). Brunei has a 0.855 HDI (rank 30), while Malaysia has a 0.769 HDI (rank 64). Thailand and the Philippines each have HDI 0.690 and 0.654 (ranking 103 and 114). Other ASEAN countries such as Vietnam, Laos and Cambodia IPM was below Indonesia.²

In addition based on the comparison of HDI, at the level of educational praxis also reflect the same thing. Minister of Industry, Saleh Husin, referring to the Global Competitiveness Index, said Indonesia in the period 2014/2015 was ranked 34 out of 134 in the country in terms of achieving Competitiveness Index (CI), the judgment refers to the basic requirements, efficiency enhancers, and innovation. Indonesia is still below Singapore, Thailand, and Malaysia.³ While the results of the study The United Nations Development Programme (UNDP) report dated July 24, 2014 Human Development Index (HDI) Indonesia ranks 108 of 187 countries, while Singapore at position 9, Malaysia (62), Thailand (89).⁴

On the micro level, it can be seen from the results of literacy Mathematics and Science in 2007, learners are only able to occupy Indonesia ranked 36th out of 49 countries. While, for science literacy ranks 35 out of 49 countries. The results of this, worse than the Egyptian students who were on the order of 35. The low quality of education on the micro level, can also be seen from the students' reading literacy achievement of Indonesia was ranked 48 out of 56 countries, (OECD, 2007). Likewise, the results of studies Progress in International Reading Literacy Study (PIRLS) 2006 in the field of reading in children of primary school worldwide under the coordination of The International Association for the Evaluation of Educational Achievement (IEA), which followed 45 countries/states, both come from developed countries and from developing countries, the results showed Indonesia was ranked 41 (OECD, 2006).

Should the above shows the low quality of education at primary and secondary level, then to higher education too. Several years ago, there was no university in Indonesia which entered the group of 100 universities in the world level (Tilaar, 2006), in recent years, the data showed that ITB, UGM and UI ranks 56, 61, and 84 of 100 best universities in Asia.⁵

Referring to the quality of education that results have not exhibited significantly improved, what has really become fundamental problems? In a democratic system of government, the state has tried to spread education, so that people get the same equality in education; however the results are not too satisfactory. How countries address these concerns. Can ICT and ODL system to overcome these challenges? How can democracy be able to motivate states responsive to these problems.

Low Quality Education

Related to low quality of education, there are many things that affect. Referring to the opinion Slamet Imam Santoso, the greatest influence, is the culture of reading. Low reading culture among students, is based on an education system that does not instill the importance of reading ranging from elementary school.⁶ Soegarda Poerbahawatja also found low quality of education in universities due to the reading lessons since elementary school was not able to stimulate students interest in reading.⁷ Others expressed the opinion that scholars and intellectuals, including professors less interest in reading, thus affecting the quality of the scientific community: characteristics of the scientific community should be read. Referring to the survey of the National Library, the data found that the public interest in Indonesia is very low, even classified as one of the lowest in the world.⁸ Mardiah (2014) said, compared with the ASEAN countries, the reading culture of Indonesian people is very low, the lowest even on ASEAN.⁹

Based on the survey of the Badan Pusat Statistik (BPS) in 2006, the conclusion of Indonesian society has not make reading as the main source of information. Indonesian society prefers watching television (85.9%), listening to the radio (40.3%) than reading newspapers (23.5%). In 2009, based on data reported by the Organization for Economic Cooperation Development (OECD, 2006), the reading culture of Indonesian society occupies the lowest position of 52 countries in East Asia. In 2011, based on a survey United Nations Educational, Scientific and Cultural Organization (UNESCO) demonstrated an index reading of Indonesian society only 0,001 (one thousand inhabitants). This is evidenced by the results of the national index which states that the index read in Indonesia is only 0.01. While the average index reading developed countries ranged from 0.45 to 0.62. These results prove that Indonesia is now ranked third from the bottom for reading.¹⁰

Factors Affecting the Quality of Education: Learning and Reading Interest

Learning and reading are the two factors that are considered to have a strong influence in generating quality of education. Learning, refers to the opinion of Piaget (Suparno, 2001:141) is an activity to obtain and find a more general thought structure that can be used in various situations. Meanwhile, Ormrod (2011), states that learning as a change in the length of a mental representation or association as a result of experience. Learning is a change in personality, which manifested as patterns of response in the form of new skills, attitudes, habits, knowledge and skills (Sukmadinata, 2007).

Not everyone can afford to be human learners. For some people, learning a routine job that is saturating. For that, there are several things to encourage people to learn, first, the specific nature curious and want to investigate the wider world; second, the creative nature that exist in humans and the desire to always go forward; third, the desire to get sympathy from others; Fourth, the desire to correct past failures with new business, either by cooperatives and competition; Fifth, the desire to gain a sense of security when it learned the lesson; and sixth, the reward or punishment as an end rather than learning. (Suryabrata, 2004).

The desire to "learn" in a person is not always caused by things in himself (internal). There are also things outside himself (external) such as the desire for sympathy, repair failures, avoid penalties and others. From that described above, there is one thing that has a big influence for someone to read is the appeal of reading. The more interesting reading that is read, and the higher power wants to know the person, the higher the desire of someone to read. One factor that may encourage a person to read is reading. To foster interest in reading depends on the draw whether the reading material and the ease of getting a source of reading.

Reading and Reading Interest

Hodgson (Tarigan, 2007) said that reading is a process that is carried and used by the reader to obtain messages, which would be submitted by the author through the medium of words or written language. Finochiaro and Bonomo (Tarigan, 2007) said the reading was taking and understand the meaning contained in the written language. In relation to interest in reading, reading would be fun if accompanied by a sense of love for reading material to read. The interest can be expressed through a statement indicating the taste more like a thing than anything else, may be manifested through participation in an activity. Lester D. Crow and Alice D. Crow (1999) states, that interest can demonstrate the ability to provide stimulus that drives our attention to someone, something or activity; or something that could give effect to the experience that has been stimulated by the activity itself. Thus, the interest may arise from the activities and results of the activities involved.

Interest for reading, is one of the principal factors for success in learning. A great desire for activities, minds earnest to dig up information and reach an understanding on all branches of knowledge in the field of study is part of an academic attitude. With the advent of "interest" is created in the mind of a person's concentration. Attention obtained fairly and without coercion against one's willingness will facilitate the development of concentration, the concentration of an activity. In this case the learning activities.

Interest, also directing actions towards a goal and an impetus for action. Because of the encouragement that comes from inside a person and also from the outside, eventually arises the interest in something. What attract someone encouraged him to do more enterprising and better. The emergence of interest, not sudden or spontaneous, but rather arise as a result of participation, the experience, the custom at the time to study or work. So it is clear that the interest will always be associated with about a need or desire. Interest is not present at birth, but gained later.

Based on the above, in conjunction with the interest can be explained as follows, that interest is not the result of human nature, but can be formed or grown, studied and developed. Interest can be linked to the specific purposes for the act, and the interests that usually bring the initiative and lead to behavior or human nature. Ki Supriyoko (Saleh, AR, 2006) states, theoretically there is a positive relationship between interest in reading (reading interest) with the habit of reading (reading habit) and literacy (reading ability). Low interest in reading people make a habit of reading is low, and low reading habits make a low reading skills. Low reading ability at the edges can cause the urge someone to learn to be low. That is what happened to the people of Indonesia, why the quality of education in Indonesia is still far from the quality of education ASEAN countries, even in the world.

Democracy as a Means of Improving the Quality of Education

Democracy is a concept of power sharing, elections, open management, individual freedom, free judiciary, the recognition of minority rights, the rule of law, a free press, political parties, consensus, constitutional government, oversight of state administration, the protection of human rights, a majority government, competition skills, political mechanisms, the freedom of state policy, a government that prioritizes the community, and so on. In the context of education, a concept that can be drawn is open management, individual freedom, the recognition of minority rights, supervision of the state administration, the protection of human rights, competition skills, freedom of state policy and government that prioritizes community. The application of the concepts of democracy stands on three pillars of democracy are interrelated functions, namely as freedom, respect for the dignity of others, equality, and a vehicle for sharing.

Referring to the concept of democracy above, democracy can be a way to change the lifestyle of a society into a society that is willing to accept inputs to improve the quality of life, such as the changing lifestyles of people from not like to read into love reading, so that the quality of education expected will increase. In the democratic societies of their human rights protected by the state, such a policy for the right to the same education. State, the concept of democracy, should be able to summon the management education that is open to every community and give recognition to the rights of individuals and minorities. So basically, democracy gives equal opportunity to all individuals without distinction of class, social status, access to education.

In the concept of democracy, the role of the country will be positive and goes in harmony with the needs of society, when educational institutions capable of being the innovator of the implementation of state power. Likewise, the community, can be a positive role if the public is able to participate in any educational process since the planning, implementation, and evaluation. Therefore, in terms of building a learning society, people who are fond of reading, educated people, can only happen if the community itself is also willing to participate or to be democratic. By being democratic, society will be critical of the policy raised by the authorities. And from the critical attitude to be the seed for the democratization of education provision by the State, to be a partner in finding a way out for national problems.

Society today is the advanced civilized society, human-oriented quality produce. To realize these communities required an education that suits the character of the community. Education is meant to be able to develop the full potential of the community become educated society that respects human dignity (dignity) with freedom, acknowledging the diversity, recognize the equal rights and are able to develop community potentials optimally.

Therefore democracy contains the concept of freedom, respect for the dignity of others, equality, and a vehicle to share, then democracy will basically recognizes every citizen as a unique person, different from each other with advantages and disadvantages of each. Democracy provides ample opportunity for the implementation and development of the potential of each individual community, both physical and mental and spiritual. Democracy also recognizes that every individual has the same rights and obligations. Related to that, education in a democratic system is the education that will put the learner as a unique individual, different from each other, and have the potential needs to be realized and developed as much as possible. The education system should provide different treatments to target students in accordance with their respective characteristics. So, in this case the parties involved in the educational process must recognize and appreciate the capabilities and characteristics of individual learners. The education system needed to give birth to such learners includes several things: first, equalization of educational infrastructure. Second, changes in the education system to a decentralized model, and thirdly the establishment of a learning culture in the community.¹¹

In an effort to realize the quality of society through the education process, all parties concerned should be aware of the democratic footing. This means that in a democracy everyone should be subject to a joint decision or agreement. Democracy in an educational context, it means equal opportunity for all.¹² That is, each individual gets an equal chance to receive education opportunity and treatment.

Referring to the earlier explanation, the low quality of education in Indonesia, is the interest in reading and learning society is low. Whereas in the context of a democratic country, Indonesia has sought to equalize education through a number of regulations such as Standar Nasional Pendidikan (SNP), distance education system and the development of Information and Communication Technology (ICT). However, as discussed, the results are not significant. Even though the decision of the SNP, ODL, as well as ICT development is a decision that has been born together or mutual agreement between the government and legislature, but has not been able to push the quality of education in Indonesia from year to year. It required a new breakthrough by utilizing existing capital. Capital is of course first, democracy (which was run the Indonesian government), both how to increase the use of ICT and systems ODL in the context of improving the quality of education, as well as the third, education should provide different treatment for each individual in accordance with the characteristics of each, in this case educational methods can not be generalized in a rigid, need flexibility to recognize the characteristics of learners, geography and culture. For example, education for indigenous peoples in Jambi, at least have to be adapted to the needs and circumstances of local communities. Thirdly the capital, is a challenge for distance education in Indonesia in achieving quality education.

ICT as a Solution to Improve the Quality of Education

Referring to the review which has been discussed above, the problem of education in Indonesia lies in the low interest in reading and learning. Factors that could encourage people to bring up the 'interest' one of them depending on the environment outside oneself. Therefore the 'interest' can be raised. Raises interest in reading among other things can be done to stimulate the readers through interesting reading sentences, drawings, and other visualization techniques. Through the use of ICT, reading can be designed, to follow the needs of the individual characteristics of the community, with the provision, reading material is able to stimulate readers and appeal to the reading. Related to that, how ICT could be a solution to increase public interest?

Today, almost all aspects of life are affected by ICTs. Almost everyone in the big cities and even rural areas are users of the gadget (phone, tablet, lap top, etc.), which is a product of ICT. Utilization gadget with a variety of Internet-connected applications and increasingly mushrooming. Especially when all the information is put together in digital or electronic form, such as digital books, or so-called e-book or electronic book). ICT is expected to cultivate interest in reading, because, referring to the opinion of Elston (Purnomo S, 2013), Information and Communication Technology, is a technology that is used to manage information and communications. Management and communication of information is related to the technology used to access, collect, manipulate and present or communicate information (UNESCO, 2013). Such technology includes hardware, application software, and connectivity, such as access to the internet. The role of ICTs in this respect is as an enabler or a tool that allows to visualize the design of interesting reading, which is composed of elements of the image, graphics, audio, and video. Reading material enriched with these elements, certainly more interesting than reading materials that contain only pure writing. Thus, the development of ICT-based reading materials, is expected to be increased public interest. The role of ICTs, in addition to providing visualization of interesting reading, with a range of connectivity is also great. Internet use is able to divide the reading material of interest to the entire corner, even to rural outposts in Indonesia. This means that the role of ICTs in accordance with the concept of democracy, equal opportunity for all, each individual gets an equal opportunity to receive interesting reading material.

Related to the role of ICTs, actually ICT has great potential to be exploited, not only generate interesting reading material. Particularly in the field of education, UNESCO has identified four (4) steps in adopting ICT education system, namely, first, the emerging stage, ie college/school in the early stages. Teachers and education personnel began to realize, choose/buy, or accept donations for the provision of facilities and infrastructure (supporting work performance). Second, applying stage; ie college/school has a new understanding of the contribution of ICT. Teachers and education personnel to use ICT in school management and curriculum (enhancing traditional teaching). Third, infusing stage; which involves curriculum by integrating ICT. Colleges/schools to develop computer-based technology in the lab, classroom, and administration. Teachers and explore through a new understanding in which ICTs change professional productivity (facilitating learning). Fourth, transforming the stage; ie college/school have tapped ICT in the whole organization. Referring to the role of ICT as identified by UNESCO, thus clearly, in addition to ICT can be utilized to produce interesting reading materials, ICT in the education system is able to create a learning environment that is integrative and creative.

Utilization of Information and Communication Technology in Distance Education

The use of ICT, the result will be much more significant if ICT is integrated into the concept of ODL. ODL is an alternative model of the learning process that provides ample opportunity for students to learn "anytime, anywhere and with anyone". Learning model in ODL is in line with democratic principles. The slogan of "anytime, anywhere and with anyone" to provide freedom for each individual to determine his desire to learn. The principle was ultimately respect for the dignity of others, equality, and opportunity that is open to the implementation and development of the potential of each individual. The integration of ICT into the ODL concept will ultimately facilitate people's access to education.

Related to the integration of ICT into the ODL concept, in the context of increasing the public interest, the excess use of ICT are: first, the material which has been designed in the form of digital will save storage space. Reading materials such as electronic books can be stored in the hard disk with a storage capacity as much as 12 thousand to 15 thousand titles, the number of book pages on average 500-1,000 pages. This amount is equal to the amount of the entire collection of books from the library of small-medium size. Second, multiple access. Shortage of books printed form (conventional) is the access to the book is single. This means that if there is a book borrowed by someone, the other members will have to wait to borrow the book is returned first. Book electronic form is not the case. Each user can simultaneously use an electronic book that is equally good to read or to be transferred to a personal computer (download). Third, it is not limited by space and time. Collection of electronic books can be accessed from anywhere and at anytime with no record of a computer network (computer internetworking). While the printed book in a library can only be accessed if the people come to the library during open library service. If the library is closed, the people who come are not able to access the library, on the contrary even though the library was open but the user is unable to come to the library so that users can not access the library. Fourth, it can be in the form of multimedia. Electronic book not only contains information that is text only or image only. But can also be in the form of a combination of text images, and sounds. Even the electronic books include documents that are only moving pictures and sound (movies) are not likely to be superseded in text form. (Abdul Rahman Saleh, 2006)

Due to the benefits derived from the use of ICT to support learning, then in the Strategic Plan 2010-2014 of the Ministry of National Education, mentioned the role of ICT: first, to utilization e_learning and e_administration, ICT plays a role in the implementation of the strategy of "strengthening institutions, working procedures and human resources". The strategy is a strategy of the achievement of the strategy objectives: "Strengthening governance in ensuring the implementation of education services". Second, utilization of ICT is believed to support efforts to increase access to education, improving the quality, relevance and competitiveness of education, as well as governance, accountability and the public image of education. Third, the low utilization and dissemination of the use of ICT in education, is one of the problems and challenges of education development 2010-2014. With the amount of attention the state of the use of ICT, the strategic planning of Kemenristek Dikti 2015-2019 is focused on the use of ICT infrastructure, especially IT Security; and system development framework/platform, based on Open Source software, especially ICT systems to support e_Government and e_Business.

Conclusion

Indonesia has fulfilled 17 years of being in a period of democratization. In the democratization period, the quality of education in Indonesia has not experienced significant development, still the quality of education in Indonesia is far behind from other ASEAN countries. Efforts by the state, such as creating a national education standards, and extend the reach of education seemed to have no effect. From various research data as discussed, showing in this case because interest in reading or reading culture of Indonesian society is weak. Low interest in reading this had been the cause of the low quality of education in Indonesia. Therefore, the challenge of education in Indonesia lies in how the state encourages communities to become people who love to read. Thus the role of the state can do is to maximize the use of ICT to produce interesting reading material, and integrate the use of ICT in the concept of ODL in an attempt to make a breakthrough to improve the quality of education.

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 - ³ kii.kemenperin.go.id/menu/content/88 diakses pada tanggal 31 Agustus 2015
 - ⁴ UNDP, 2014. The 2014 Human Development Report
 - ⁵ http://www.webometrics.info/top100_continent.asp?cont=asia, diakses pada tanggal 2 September 2015
 - ⁶ see, Jurnal Visi Pustaka Vol.3 No.2 - Desember 2001
<http://perpusnas.go.id/en/MajalahOnlineAdd.aspx?id=63>
 - ⁷ see, Jurnal Visi Pustaka Vol.3 No.2 - Desember 2001
 - ⁸ see, Jurnal Visi Pustaka Vol.3 No.2 - Desember 2001
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IMPROVING RE-REGISTRATION OF FIRST SEMESTER WORKING ADULTS EMBARKING ON TERTIARY EDUCATION VIA E-LEARNING AT OPEN UNIVERSITY MALAYSIA

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Abstract

Returning working adults embarking on a journey to obtain a tertiary education via open and distance learning always face challenges of a new learning environment. New technology used today may provide some form of obstacles especially for new and older learners which results in them leaving the system before the second semester begins. This paper intends to investigate the impact of interventions carried out at Open University Malaysia on first semester learners in terms of academic supports and their correlations to re-registration in the following semester. The research carried out involved the use of a tracer study tracing 396 learners' attendance in the four academic support services provided. The attendance and re-registration of these learners are recorded as dichotomous data. A correlation was then established between these variables. Kruskal-Wallis and Multiple Regression analysis was also carried out to find the impact. The research also look into the re-registration of learners over the past four semester to establish a pattern. Results obtained found that there is a correlation between attendance for Tutorial, Learning Skills, Assignment Preparation, Exam Coaching workshops and Re-registration. Kruskal-Wallis test found that there is a significant difference in learners' Re-registration between learners who attend and those who do not. Multiple regression analysis found that Exam Coaching workshop and Tutorial attendance have impact on learners Re-registration in the following semester where these two variables explain 41.2 percent of the variance in Re-registration. The study found that Open University Malaysia's efforts in providing these academic support services has significant impact on increasing its first semester learners' retention. This study can help other open and distance learning universities to relook at how first semester learners can be supported in order to increase their retention.

Keywords: Retention, Academic Support Services, First Semester Open and Distance Learners

1. Introduction

As Malaysia steps into the 21st Century supported by improved Information and Communication Technology especially the Internet, more and more working adults are opting to stay at work while they pursue their studies. They found that such mode of study is flexible and suits their hectic lifestyle. Thus in Malaysia, we currently have several private higher education institutions offering blended learning mode following the success of Open University Malaysia (OUM), the first Open and Distance Learning University in Malaysia, which has its first intake in 2001.

OUM faces competition from other non-traditional universities, which include the Wawasan Open University, Asia e-University, and Vinayaka Missions International University College. Apart from that many other Private and Public Universities such as Malaysian Northern University, Malaysian Sains University, and Segi University are also offering an extended part-time weekend courses to cater the increased demand in tertiary education.

However, the attrition rate of these part time non-traditional students is also very alarmingly high. High attrition affects not only the universities' revenue but also their perceived image in terms of teaching quality and quality of the services and administration provided. Universities have taken various retention initiatives including setting up the education portal and learning management system to provide better learning and services support. Some universities are now moving towards a Learner-Centred approach in addressing its teaching curriculum. Unfortunately these efforts have not been significantly successful in reducing attrition. Attrition has always remain high among non-traditional universities at 30 to 50 percent (Carr, 2000).

According to Latifah, Bahroom, and Sungsi (2009), attrition rate is highest in the early part of the learners' study. Research conducted by Ng, Raghavan and Rosli (2012) concurred with their suggestions where they found that retention rate of new learners at OUM are the lowest compared to learners of subsequent cohort. Most retention rates quoted by previous researchers are too general and did not take into consideration the retention rate of various cohorts. The definition of retention rates and attrition, the opposite of retention, is defined differently by different institutions of higher learning.

OUM have carried out various retention efforts since 2005. Efforts which have seen some progress over the years involved the engagement of learners using collaborative online learning and online discussion forum, use of short message system (sms) to alert learners, and social media such as Facebook and Weblogs.

The Center for Students Management of OUM has embarked on another retention program in 2011 targeting first semester learners by conducting face-to-face academic advising program. Ng, Raghavan and Rosli (2012) reported that for the first time in OUM, the retention rate has surpassed the 80 percent level compared to 69.1 percent in 2008.

The research was further expanded to cover other aspects of interventions carried out on first semester learners to find its impact on their re-registration. The findings of the research are reported in the following sections.

2. Problem Statement

Despite the many retention intervention efforts by OUM, it was found that the number learners quitting their programmes each year is still high though it has the lowest attrition among the non-traditional universities. According to Ng (2010), the attrition rate seems to have improved since 2002 (13.8 percent) until 2007 (4.1 percent) and then experienced a slight increase in 2008 (7.2 percent), dropped to 4.5 percent in 2009 and increased to 17.4 percent in 2010. (Note that the 2010 data is captured for the first three months of the year).

According to Ng (2010), a four-year degree at OUM costs an average of RM20,000. Each semester costs an average of RM1,000. If a learner quits after first semester and using OUM's cumulative enrolment of 150,000, then the total amount of loss incurred by OUM since 2001 due to attrition is RM150 million.

With stiffer competition and high cost of recruiting students, it is important that retention efforts are given much attention. Attrition research conducted by Ng, Raghavan and Rosli (2012) and Latifah, Bahroom, and Sungsi (2009) on OUM learners noted that attrition is highest among new learners compared to other cohort of learners.

3. Research Objectives

The objective of this paper was to investigate the impact of the interventions taken such as the Learning Skills Workshop, Assignment Preparation Workshop, Exam Coaching Workshop and Class Tutorial, on the learners' Re-registration for the following semester. Figure 2 shows the conceptual model of the research.

Six research questions were used to guide this research. They are:

- (a) Is there a correlation between Learners' attendance in Learning Skills Workshop (LSW) and Re-registration?
- (b) Is there a correlation between Learners' attendance in Assignment Writing Workshop (AWW) and Re-registration?

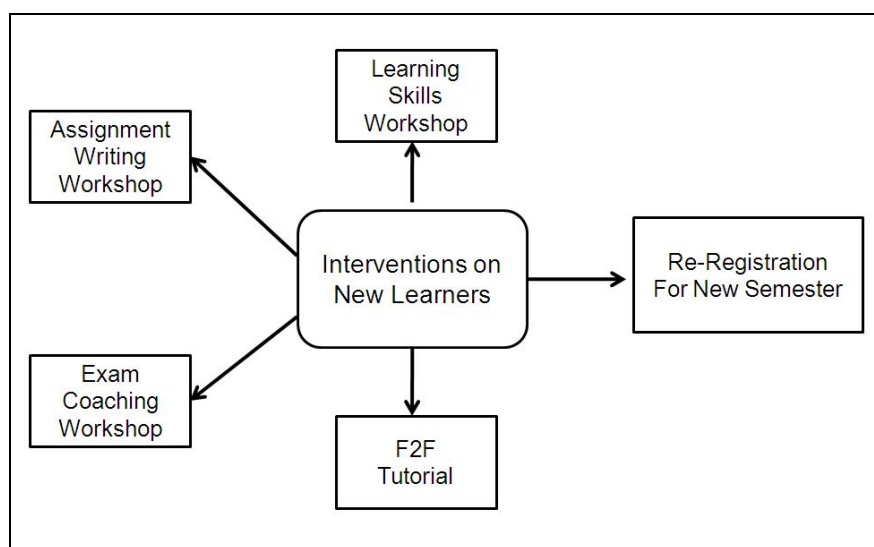


Figure 2: Conceptual model

- (c) Is there a correlation between Learners' attendance in Exam Coaching Workshop (ECW) and Re-registration?
- (d) Is there a correlation between Learners' attendance in Face-to-Face Tutorial (F2F) and Re-registration?
- (e) What is the contribution of LSW, AWW, ECW and F2F on Re-registration?
- (f) Is there a difference in re-registration rate between normal entry and flexible entry learners?

4. Literature Review

Attrition affects both traditional and non-traditional learners. The reasons are complex and multiple. According to Palloff and Pratt (1999), Reisman (2003) and Rovai et al. (2007), attrition among distance learners are due to their feelings of isolation. Robertson et al. (2008) opined that distance education lacks activities that promote sense of community found in face-to-face traditional setting thus affect the students' success. Sense of community in online learning environment can help foster the feeling of connectedness, which encourages and supports successful learning and increases retention and graduation rate.

Tinto's (1993) Student Integration model and Bean and Metzner's (1985) Student Attrition model have suggested that learner's involvement, engagement and integration into the academic and social system of an institution are key factors in determining if the learners persist or dropout. Astin (1993) noted that the learners' tendency to drop out of college is inversely related to the degree of direct involvement in the academic and social life of the institution. He added that the strongest indicator of retention is the degree of connection to peers and faculty that a learner makes.

According to Morgan and Tam (1999), evidence from previous researches suggested that low sense of community is a result of feeling of isolation, which is related to learner characteristics associated with attrition. Pascarella and Terenzini (1991) noted that the more intensely learners are engaged and involved in their own education, the more likely they are to do well, be satisfied with their educational experience, and persist in their studies.

According to Liu and Oh (2007), successful online learning requires active participation, which otherwise will lead to isolation and disconnectedness. Higher participation results in higher sense of community. However, technology poses great challenges. They added that institutions need to incorporate community-centred approach, facilitative and supportive role, and social support network.

Kearsley (2002) concurred that a high level of interaction is desirable and positively affects the effectiveness of any distance education course. Olgren (2004) pointed out that faculty interaction with their learners have impact on learner retention rate. According to him, it is not the type of interaction that is the problem, but rather the lack of interaction. According to Brook and Oliver (2003), social phenomenon of community is becoming increasingly recognized and may be put to good use on the support of online learning.

Serwatka (2005) opined that engaging students as early as possible and keeping them engaged is the key to reducing attrition. In order to engage the students, educators must be adequately prepared with the techniques and strategies needed. Moxley et al. (2001) argue that retention is more than completing course. They suggested that students must be supported to successfully meet their study goals and this requires strong student communities, which are often cemented during the orientation process.

Raghavan (2011) stated that early and frequent contact with students is critical to address retention. Regular meetings must be initiated to encourage spontaneous interactions among students and administration that may build positive relationships and the foundation for learning communities. Murtaugh, Burns, and Schuster (1999) pointed that the greatest attrition tends to occur between freshman and sophomore years. They suggested that it is vital for educators to understand freshmen motivations, behaviors and attitudes and experiences in order to develop programs and interventions that meet their needs and encourage persistence. The high rate of first year attrition has a direct impact on the cost productivity of the institution and personal success of the individual student.

5. Research Methodology

Part :I

- (a) *Samples:* 396 May 2012 Semester new learners from four selected centers in Perak, Pahang, Negeri Sembilan and Malacca, were traced based on their attendance in the four academic interventions against their re-registration for the following September 2012 semester.
- (b) *Data Analysis 1:* A correlation is then established using Spearman Correlation Coefficient between the four interventions; Learners' attendance in Learning Skills Workshop (LSW), Learners' attendance in Assignment Writing Workshop (AWW), Learners' attendance in Exam Coaching Workshop (ECW) and Learners' attendance in Face-to-Face Tutorial (F2F) and their Re-registration in the following semester.

- (c) *Data Analysis 2:* Kruskal-Wallis Test was also used to find if there is a statistical significant difference in the Re-registration of learners between those who have low attendance and high attendance in LSW, AWW, ECW and F2F.
- (d) *Data Analysis 3:* Multiple Regression analysis was used to find the impact of the four interventions on Re-registration

Part 2:

Re-registration Data from each Learning Centre involving first semester learners who started their studies at OUM in the January 2014, May 2014, September 2014, and January 2015 were analysed and tabulated to find the re-registration rate.

6. Findings

The results of the tracer study are summarized in Table 1. It was found that 206 or 82.7 percent of learners who have attended LSW, 235 or 85.5 percent who attended AWW, 233 or 95.9 percent who attended ECW have re-registered for the following semester. Tracing on those who have attended tutorial is divided into two groups; one group who has attended two or less tutorial sessions and another group who has attended three or four tutorial sessions. It was found that 235 or 90.7 percent of learners who attended three or four tutorial sessions have re-registered in the following semester. It was also found that the overall total number of learners who have re-registered in the following semester was 303 or 76.5 percent.

Table 1: Cross Tabulation of Learners' Attendance in LSW, AWW, ECW, F2F and Re-Registration

Re-registration Status	Attend LSW		Attend AWW		Attend ECW		Attend F2F Tutorial	
	No	Yes	No	Yes	No	Yes	For 0 or 1 or 2 tutorials	For 3 or 4 tutorials
No	50	43	53	40	83	10	69	24
Yes	97	206	68	235	70	233	68	235

Results of the Spearman Correlation Coefficient analysis carried out are shown in Table 2. It was found that all four interventions have good correlation with Re-registration and ECW is the highest followed by F2F.

Table 2: Spearman Correlation Coefficients of LSW, AWW, ECW, F2F and Re-registration

	Attend LSW	Attend AWW	Attend ECW	Attend F2F
Re-register Status	.191**	.318**	.576**	.461**

** Two-tailed

The Kruskal-Wallis test was carried out to find if each of the four interventions on learners has impact on their Re-registration. Results obtained showed that there is a statistical significant difference in Re-registration between learners who have attended and those who have not attended the LSW (Chi-square = 15.937, $df = 1$, $p = 0.000$), AWW (Chi-square = 26.708, $df = 1$, $p = 0.000$), ECW (Chi-square = 140.261, $df = 1$, $p = 0.000$) and F2F (Chi-square = 44.315, $df = 1$, $p = 0.000$).

Table 3 shows the results of Multiple Regression analysis on LSW, AWW, ECW, F2F and Re-registration using Stepwise approach. Results obtained showed that only ECW ($t = 10.536$, $p = 0.000$) and F2F ($t = 6.805$, $p = 0.000$) of learners have significant impact on their Re-registration. It was also found that 41.2 percent of these two interventions explain the variance in Re-registration.

Table 3: Multiple Regression Analysis of LSW, AWW, ECW, F2F and Re-registration

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.646(a)	.418	.412	.326

Model	Sum of Squares	df	Mean Square	F	Sig.
	29.721	4	7.430	70.110	.000(a)
1	41.438	391	.106		
	71.159	395			

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
(Constant)	.305	.038			8.081	.000
Attend LSW	.024	.035	.027		.682	.496
Attend AWW	.048	.039	.053		1.230	.219
Attend ECW	.397	.038	.456		10.536	.000
Attend F2F	.258	.038	.289		6.805	.000

Table 4 shows the data of learners' re-registration from January 2014 semester to January 2015 semester obtained from the registry department of OUM. The average registration rate was 78.2 percent which means the attrition rate is 21.8 percent.

Table 4: Number of Learners Re-registered in the Following Semester

Intake	Registered	Re- Registered	Variance	%
Jan 14	2,790	2,181	609	78.1
May 14	2,171	1,666	505	76.7
Sept 14	2,571	2,042	529	79.4
Jan 15	3,087	2,418	669	78.3
Overall	10,619	8,307	2,312	78.2

Table 5 shows the re-registration of learners who entered OUM via normal entry and flexible entry. It was found that the average re-registration rate for normal entry is 79.1 percent and flexible entry is 75.8 percent. Thus the type of entry has minimum impact on re-registration.

Table 5: Number of Normal Entry and Flexible Entry Learners Re-registered in the Following Semester

Semester	Normal	Normal	Open Entry	Open Entry	%	%
	Registered	Re Registered	Registered	Re Registered	Normal	Open Entry
Intake Jan 14 (Re-Registered May 2014)	1,984	1,583	802	595	79.8	74.2
Intake May (Re-Registered Sept 2014)	1,572	1,212	598	454	77.1	75.9
Intake Sept (Re-Registered Jan 2015)	2,007	1,618	561	422	80.6	75.2
Intake Jan 15 (Re-Registered May 2015)	2,231	1,750	852	664	78.4	77.9
Overall	7,794	6,163	2,813	2,135	79.1	75.8

7. Conclusion and Recommendations

The findings above was the first of its kind using quantitative approach in investigating factors that can contribute towards the retention of new open and distance learners. There may be many factors, however, but four crucial retention interventions usually carried out at OUM for new learners were investigated to see if they have impact on the learners' re-registration as a measure of retention.

Learning Skills Workshop (LSW) was the first intervention carried out by OUM to expose new learners to OUM's learning environment and the skills required to 'survive' at OUM. After the first F2F tutorial is held, the learners were encouraged to attend the Assignment Writing Workshop (AWW), where they will be taught on the technique in preparing and presenting their written assignments. When learners have completed attending all their four F2F tutorial sessions, they are again encouraged to attend the Exam Coaching Workshop (ECW) where they are taught on the technique of answering exam questions. Learners are required to re-register for the coming semester via online usually after Tutorial 3. However, they can still re-register after ECW and when the semester begins with valid reason and special permission.

Results of this research found that the four interventions have correlation with learners' re-registration in the following semester. It was also confirmed through Kruskal-Wallis Test that these interventions have impact on re-registration. However, multiple regression analysis showed that only two factors; ECW and F2F contribute significantly towards Re-registration.

These findings concurred with the suggestion of Olgren (2004), Serwatka (2005) and Raghavan (2011) who opined that early interventions and support can help in retention efforts. Such interventions are seen as engagement efforts to help reduce the feelings of isolation among open and distance learners as propose by Palloff and Pratt (1999), Reisman (2003), and Rovai et al. (2007).

Retention rate can further be improved by improving the mechanism in conducting the above four interventions such as making it compulsory for new learners to attend the workshops by earning credit points for example.

Type of entry qualifications has little impact on the rate of re-registration for first semester learners due to the impact of the above four variables. It is noted however that the degree in which the four interventions must be conducted can help improve re-registration rate.

A more thorough research could also be carried out by including other interventions such as academic advising or counseling to weaker learners, and incorporating other demographic variables such as financial background, time management and language problems of learners.

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EXPLORING THE FRONTIER OF INFORMAL OPEN LEARNING

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Abstract

More than four decades ago, Moore (1973, p.677) pointed out that the world of learning and teaching was like the iceberg, it was not really as it appeared. Hidden behind formal education, there were large group of people who engaged in informal learning independently. That condition remains valid until today. The informal learners include adult learners, school leavers, and school dropouts, who continue learning for all reasons in diverse areas. An open learning institution has the mission to provide learning opportunities to the people who have no access to education. However, informal learning is an area that is yet to be fully explored. Informal learning environment is drastically different from the normal learning institutions. The mode of these learners is self-directed in nature. It often aims to create values rather than to achieve paper qualifications. Informal learning can be carried out on individual basis or in groups. An example of such activities is the “Maker Movement”. An open institution can institutionalise such activities through project based learning to engage informal learners and facilitate learning that aligns with the needs of the changing society.

Introduction

An education institution was regarded as the knowledge provider that helps to channel knowledge to the students. Traditionally, an education institution is where people go to seek knowledge. However, this traditional learning system is unable to cater for growing population and contemporary learning needs. These needs have encouraged the growth of alternative learning system, such as open distance learning (ODL) and blended learning.

In the information age, information has become freely available. Education institution is no longer the only main source for learners to seek knowledge. Knowledge domains have expanded so rapidly that textbooks and curriculums become obsolete in an unprecedented speed. Diverse fields of knowledge are freely available online in countless forms. Learning institutions have come out with innovative approaches such as online learning, e-learning, and massive open online course (MOOC). These efforts have enabled more people to access to learning opportunities by engaging learning institutions or learn at their own pace. Until now, ODL institutions have done extremely well in engaging learners who have left traditional learning institutions.

Nevertheless, the ODL system is still bound by limitations as a result of the legacy of traditional education. The system did not fully break away from the traditional standardised curriculum and examination format. Standardised examination has restricted the flexibility for learners’ choice of courses. The problem faced in managing standardised examination is one of the biggest hurdles in advancing the education system (Evans, 2013).

According to Robinson (2006), the education system we have today was designed to produce standardised workforce for the industry. This system was thought to suppress diversity and creativity. He argued that learning should be personalised, and not standardised. Most of the countries in the world use similar system, hence inherited the similar modern education problems. Ito (2014) suggested that “education is what people do to you and learning is what you do to yourself”. Generally, people are more motivated to learn independently than being fed with information that they have no interest.

Traditional education structure is built on the “elitist” model. Those who survive the education system were thought to be successful. On the other hand, we have seen talented individuals become successful in their lives not because of their formal education but through self learning. For example, Albert Einstein, Benjamin Franklin, Bill Gates and Steve Jobs, did not complete their studies but become successful in their careers. While these people do not represent the majority of people, they have shown that academic achievement is not the only way to success. Friedman (2014) pointed out that a degree does not represent one’s ability to do any job, as the world only pays attention to what a person can do with the acquired knowledge. There is another form of learning process that enables learners to be successful. This form of learning is informal, and does not meet the characteristics of standardised education. In contrary, it meets the criteria suggestion by Ken Robinson, i.e. diversity and personalised.

There are many suggestions for informal learning, which refer to somewhat similar ideas, such as Competent Based Learning (Bates, 2015), Problem Based Learning (Tan, 2003), Self Directed Learning (Garrison, 2003; Boytzis, 2001), and Quaternary Learning (Meyer-Guckel et al, 2008). In general, they refer to learning processes that are not bounded by standardisation and regulation imposed by the formal education system. This paper intends to suggest a framework for informal open learning that helps to define learning process of informal learners, specifically for technical and vocational areas. This paper serves as an exploratory study about a possible framework for informal open learning.

The Next Frontier – Informal Open Learning

According to Moore (1973), there are more informal learners in this world, than the students who have registered with learning institutions. In fact, it is safe to say that all homo sapient are informal learners. Learning takes place ever since a life is born to the world. Even if we exclude children who are too small for schooling, there is still a large pool of “invisible” learners who have left formal education but continue to learn for career or leisure. The term “informal learner” is used to represent an individual who falls into this category.

The approach to engage the informal learners is very different from the learners of formal education. Informal learners would require more autonomy in the learning process. They are self-directed in determining what they learn and how they learn. Most of them are already equipped with experience and prior knowledge. What they need is a new “environment” that enables them to achieve self-development. To understand what new environment is, we need to explore how these informal learners manage knowledge in the learning process.

Informal learner includes every one of us, who engaged in learning through reading, working, and leisure in daily activities. The sources for learning vary from books, television, radio, Internet, and day-to-day interactions. The learning process takes place without the intention of fulfilling the formal education requirements, such as examinations and assignments. The motivations could come from curiosity or the need to do something. At the end of the learning process, there is certain value to be created. The value could be something for self-satisfaction, or a creation that will benefit others.

An informal learning process takes place when there is a motivational factor, which stimulates learners to seek more knowledge. Concurrently, the learners apply the knowledge gained on their tasks. New knowledge could be gained from the experience, and the learning process continues.

In formal education, there are series of goals to fulfill. Those goals include passing examinations, beating the competitions, qualifying from one level to another, getting a degree, and gaining recognitions. In informal learning, the goal may be as simple as to learn when there is a need, and use the knowledge to achieve something or to create a value.

According to Robinson (2006), the reason we have a complex formal education system could be traced back to the industrial age. Education system was created to produce standardised workforce to serve the industry at that time. However, as time evolved, the system has become more complex. The education system has developed into a rigid structure, like a conveyance process that produces batches of students throughout the hundred years. This education system has been standardised across the world through globalisation. While the needs of the learners have changed, the process that produces the graduates has not evolved fast enough.

As the world moves into the information age, new generations who adopted Internet as the main source of information have emerged. Internet has enabled everyone to freely access information with much flexibility. The role of education institutions as the knowledge provider has somewhat been duplicated by the Internet. Nevertheless, this new generation is still a part of the student pools in the formal education today. The education system requires the students to comply with the formal process of following the standardised curriculum and passes the examinations in order to graduate. This condition has created a conflict between the desire for a degree and the freedom to learn.

Realising the constraints of current education system, almost all countries in the world are looking for education reform. However, to change a system that has established for a hundred years is not an easy task. In most countries, education reforms started from lower education and extended to higher education. However, education reform can also start from another end, i.e. the pools of formal students who have past formal education, who have become the informal learners.

Managing informal learning seemed to be difficult, as it does not have fixed curriculum. However, there is a fixed pattern in the learning process that can be observed and studied. Learning process involves flow of knowledge, which can be well described by the knowledge management (KM) process.

Knowledge Management

Knowledge Management (KM) was the favourite topic for the industrial world in the 20th century until early 21st century. Beyond that period, KM has evolved into products of the Internet era, such as blogs, social medias and forums. According to Drucker (1993, p.42), “knowledge is the only meaningful resource today”. Nonaka and Takeuchi (1999) proposed a notable knowledge management model in series of their publications on knowledge creation. They suggested the concepts of “tacit knowledge” and “explicit knowledge”.

Tacit knowledge is part of knowledge that is embedded in the memories of individuals, which is hard to be articulated. On the other hand, explicit knowledge is a type of knowledge that we can codify and capture on paper, files, and in database, so that we can share with each other.

Nonaka and Takeuchi (1999) suggested the conversions of “tacit” and “explicit” knowledge across four quadrants: “Q1: socialization”, “Q2: externalisation”, “Q3: combination”, and “Q4: internalization”. The actions that convert information into personal knowledge and vice versa through the four processes enable learning to take place (Figure 1).

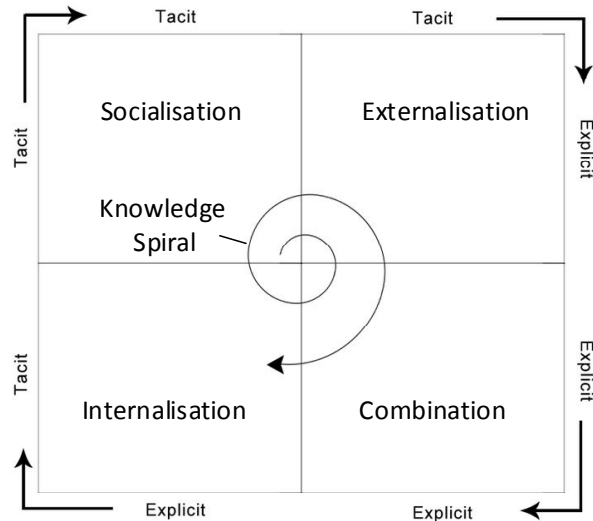


Figure 1: SECI model

The four quadrants (Q1 to Q4) can be described as follows:

Q1: Tacit to Tacit (Socialisation) – This quadrant represents social interactive activities by the members to exchange tacit knowledge. Tacit knowledge is shared through face-to-face conversations or through communication technologies.

Q2: Tacit to Explicit (Externalisation) – The conversion of tacit to explicit knowledge is done through externalisation, i.e. recording, publishing or articulating knowledge. Externalisation can be carried out in the form written documents, illustrations and physical products or other creative media.

Q3: Explicit to Explicit (Combination) – The creation of explicit knowledge can also be carried out by combining other available explicit knowledge. Writing and editing with texts, images, videos or audio files can be considered as the combination process.

Q4: Explicit to Tacit (Internalisation) – When an individual or a group learns from the available explicit knowledge, and turn it into his or her own, internalisation is taking place. The process includes reading, watching and listening.

Knowledge and Value Creation

The purpose of knowledge is to create values. Having the knowledge in the brains does not add any value until it is translated into actions. Actions guided by specific knowledge will determine if values are created. Through the continuous cycles in the SECI process, value needs to be created. The dimension perpendicular to the SECI plain represents the value of learning as shown in Figure 2.

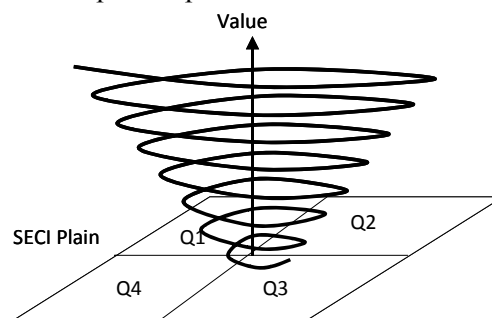


Figure 2: Value in SECI model

The value for learning can be viewed in terms of the outcomes the SEIC learning cycles. In business perspective, knowledge is to add values to the customers through products or services. For example, the value of a restaurant is to provide good dining experience to its customer. The restaurant owner and employees learn to provide quality food, nice environment, and good customer service to satisfy its customers.

The main different between formal education and informal learning is the perceived value creation in learning. In formal education, the values of learning are shown in the examination results. However, in informal learning, the values can be directly shown in problem solving or product creation. With the direct link, informal learning can better tie to the original intention of learning. Learning takes place when activities are designed around clear objectives. This is a common framework for project-based learning (PBL). In fact, the exposure to PBL helps to create informal learners who are comfortable with self-directed learning (Stewart, 2007).

Project-Based Learning

Informal learning has no fixed curriculum. The objectives for each learning process are unique. It cannot have standardised assessment like formal education. Learners are given a problem to solve. They can work in team to solve the problem, or to create a product needed by the customers. The role of educator is shifted from teaching to project coaching.

Informal learners need to have basic knowledge about what they want to do, and what knowledge they need to achieve the given tasks. Learning need to be self directed with little supervision. It is not necessary suitable for everyone. There are still learners who need to follow formal education and continue moving through the academic path. Informal learning is an alternative for learners who think that formal education is not for them. Hence, informal learning is more suitable for adult learners. It could focus on hands-on project based learning.

Informal open learning process needs not to be created from scratch. It existed in the form of projects in the current formal education system. The different is that informal learners work based on own initiative and personal choice, either alone or in a group.

These projects should be treated as equally important as academic research projects. Although academic research projects is considered to have higher impact in the eyes of academics, their research targets are usually too far ahead in time to be relevant to the industry. In fact, the researchers in the traditional institution often avoid taking up “industrial relevant” projects as they are considered to have low “impact-factors” in formal research journals. This situation has created a large gap between academia and industry. The projects for informal learning should not be constraint by such views. It should fill the gap in terms of industrial relevancy, and the value should directly meet the needs of the industry. In fact, there is already informal community projects existed, for example of informal learning driven by the Maker Movement.

Maker Movement is an emerging movement by ordinary people, which was extended from the extension of the Do-It-Yourself (DIY) culture. Maker Movement is in line with constructivism (Donaldson, 2014), which emphasizes on learning-through-doing, collaboration and sharing. Hence, it is especially suitable for learning with applications of technologies, for example in product design, fabrication, calligraphy, movie making and software programming. It is a movement that brings back the tradition of DIY, which emphasises on sustainable development, in oppose to globalised mass production and consumerism.

Framework for Informal Open Learning

Informal open learning serves a few purposes:

- To bring people who are out of formal education back to the learning system without subjecting them to the formal education constraints
- To encourage and guide informal learners to contribute directly to value creation needed by the society
- To become an alternative learning platform for learners who wish to engage informal learning

SEIC model provides a suitable approach to define the framework for the learning process. While the informal learning appeared to be unstructured, it is a generic knowledge management process that adheres to the SEIC model. The suggested framework is as shown in the following paragraphs.

Firstly, the institution hosting informal open learning needs to prepare facilities needed by learners. The facilities include:

Socialising: Space for meeting and discussion

Externalising: Platform of sharing recorded activities

Combining: Facilities for results and report publication

Internalising: Online learning contents searchable by functional topics

In addition to that, the institution can also provide contacts and networking opportunities so that the students are able to find subject-matter experts and financial supports, to help in the development of industrial relevant projects.

Learning activities are carried out using project-based learning or problem-based learning approaches. Students work into groups on specific tasks they choose to complete. Each group is supervised by a coach. The role of a coach is to maintain conducive environment for SEIC process to take place. The groups need to be monitored in their progress by observing the increase in value after each learning cycle. Here are the possible activities:

Socialising: Students engaging a supervisor and experts (either online or face-to-face), discussion about topics, progress and exchange of ideas

Externalising: Record activities and publish reports and technical papers of the project.

Combining: Compile findings, reports and technical papers

Internalising: Searching for new information online and from any convenient sources.

There are many possible learning paths that could be executed within the SEIC model. Table 1 illustrates one of the possible learning paths.

Table 1: Informal Open Learning Example in SEIC Framework

	Increase in Values →						
Socialising	Idea generation	Finding members	Forming group	Carry out project	Group discussion	Complete prototype	External review
Externalising	Writing down ideas	Writing down proposal	Project plan	Record activities	Record activities	Record activities	Complete portfolio
Combining	Compiling similar ideas	Research	Research review	Prepare reports	Prepare reports	Final report	
Internalising	Reading	Learning	Understand tasks	Self learning	Self learning	Self review	

The outcomes of the learning process are the experience and skills that learners acquired. These outcomes can be demonstrated through an online portfolio to the potential employers or customers.

Roles of ODL Institutions

Open Distance Learning (ODL) is about educating the masses. In line with the objectives of open learning, ODL institutions can play an active role to engage more of informal learners and bring them to the mainstream learning.

So far, ODL system has successfully removed the dependency of students on their teachers. However, it does not fully break away the dependency of the students on contents provided by the schools. These contents are still constraint by the curriculum structures and traditional standardised examination format. Likewise, Massive Open Online Course (MOOC) faces the problem of find the suitable assessment methods for the large group of students. The problem faced in managing standardised examination is a big hurdle in advancing the education system to the next step.

By adopting PBL approach in informal open learning, the focus will be shifted from the learning content to the problem to be solved (Tan, 2003, p.12). Informal learners are experienced people who have strong tacit knowledge. They know what need to learned, given relevant guidance and stimulation. An institution acts as a facilitator to help finding the learning contents but not the content provider. Hence, PBL approach helps to break away for overemphasis on rigid curriculum structures.

In informal open learning, the value is measured directly from the results of the student's work. This result can be easily demonstrated from the actual work. With the use of modern recording technology, the working diary of the students can be recorded in the personal portfolio, such as e-portfolio (Chau and Cheng, 2010). E-portfolio has been around for a long time. It can help to record the works of students in details. An e-portfolio can serve a few purposes, i.e. to validate the work, to advertise the capabilities of learners, and to be used as record knowledge so that others can learn from the experience. In this way, the learners can be evaluated directly on their works rather than through academic assessments (Flores, 2014).

The departure from learning contents and assessments will free the institutions from administrative burdens. It will make learning process even more flexible, efficient and cost effective. The institutions can focus on creating values required by the society rather than fighting to meet schedules and numbers.

The strategy for informal open learning should be to break away from standardised assessment to standardised facilitation. The aim is to ensure that value requirements are clearly spelt out and communicated to the learners. Those values are the beacons that guide the learners to work towards achieving specific objectives. An institution works as an administrative body that ensures the communication between the informal learners and their potential benefiter. For technical and

vocational projects, the institutions can work with the local Maker groups to help formalise the projects. The institution needs not to assess the qualifications of the learners, but it needs to assess the commitments of the learners in completing the projects.

Discussion

The Internet has driven many changes to the society. In addition to education, Internet has also changed the way business is conducted, for example, the emergence of “sharing economy”.

Sharing economy emerges due to the characteristic of the Internet, i.e. the ability to communicate with many people at the same time. It is possible to conduct business to a “crowd” through the internet. We have crowd funding that enable fund collection for specific courses. We also have crowd sourcing, where individuals are able to offer their services online to customers, which are traditionally provided by businesses. For example, Uber has enable individuals to become taxi driver on part time basis with a cost lower than the traditional taxi services, and with higher efficiency (Reynolds, 2015). Like wise, other services such as house works, home tuitions, or copy writing can be offered by individuals in the neighbourhoods instead of professionals who could be more costly and difficult to be reached.

In sharing economy, informal learners can present themselves as service providers through the skills demonstrated in their e-portfolios. In this way, they are not just opening themselves to be employees of a company, but also as business owners who provide relevant services for customers in need.

Informal open learning is also a viable strategy for aging society and for the governments to optimise the work force. Retired personnel participating in informal learning will be able to continue contributing their skills to needed customers through sharing economy (Burns, 2013). In this way, the retirees will be able to support themselves through lifelong learning, and depend less on their children or governments.

More and more people have continued to drop out of schools due to the increase in education costs or lack of interests. Despite some successful examples in high profile entrepreneurs, most of school dropouts have little chance to succeed (Carlozo, 2012). ODL institution can play the role in guiding this group of people by allowing them to work on their interests through informal learning. This paper serves as a suggestion to open learning practitioners that this is probably the time to consider informal open learning in the mission to educate the masses.

Conclusion

Formal education has met its limit in providing learning opportunity for all. There is a need to explore new frontiers. One of them is the informal open learning. KM can provide a framework for unstructured process in informal open learning. Through KM process, the emphasis of learning is shifted from academic qualification to value creation. Project based learning is an ideal platform for information learning. ODL institutions can play a leading role to institutionalise informal learning framework. As the society is moving towards “sharing economy”, ODL institutions can help to ensure that informal learners are provided with the platform to convert their passions into values that are required by the society.

The quest for academic excellence must continue in traditional education, but the gap between the industry needs and academic pursuit need to be bridged. ODL institutions have the potential to bridge this gap due to their innovative, inclusive and adaptive culture. Hence, informal open learning will push the boundary of learning a step further. The inclusive approach will enable more people involved in lifelong learning, and to be visible in their contribution to the mainstream value chain in the society.

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EXPLORATION OF SCHOLARSHIP FUND MANAGEMENT MECHANISM IN THE OPEN UNIVERSITY OF CHINA IN THE NEW DEVELOPMENT MODEL

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Abstract

The scholarship is adopted as an incentive mode to student by most institutions of higher learning at home and abroad. It is a very worth discussion of new issues that how to take learners as the center , how to service all for the life-long learning , how to manage the scholarship and fund better for the school's transformation and upgrade in the Open University of China in the new development model. In this paper, based on the actual situation of the trial work of scholarship in the Open University of China in recent years, mines the problems and its origins existing in fund raising, distribution and supervision of the system; on the basis of the successful experiences of domestic and foreign universities, combined with the characteristics of distance education, Open University, focus on scholarship fund management mechanism in the Open University of China. In order to provide theoretical support for constructing perfect and sustainable scholarship system with Open University's characteristics, this paper analyzes the aspects of rationalizing the management system, expanding funding channels, setting scholarship level and amount, preserving and increasing the value of fund and following benefit evaluation and more.

Keywords: *The Open University of China (OUC), new development model, scholarship fund, management mechanism, open and distance learning (ODL)*

1. Introduction

The Open University of China (OUC) is the backbone of the distance education in our country. It was founded on July 31st in the year of 2012, which indicated the educational development strategy goal “To Found Open University Well” has made important progress. At present, OUC is transforming from the traditional mode of the radio and TV university to the modern way of open and distance learning (ODL). It establishes the running system of “block, bar and point” trinity relying on the system of the radio and TV universities and cooperation with universities, industries, enterprises and various organizations; develops the teaching mode of “six net connection” as the main characteristic; constructs the technical support model of “cloud, road, terminal” trinity and so on.

Scholarship is a kind of student evaluation and reward system widely used in domestic and foreign colleges and universities. Scholarship achieves the incentive function through the rewards and honors to outstanding students, to encourage and mobilize the enthusiasm of the students, and guide students to establish positive learning and living standards; achieves the financing function through issuing money to improve the students' learning and living conditions. Therefore, in the new development model, the effective development of OUC scholarship work will service the transformation and upgrading of the school, and the scholarship fund management is the important part of it.

2. Current Situation and Problems of the Scholarship Fund Management in OUC

2.1 Current Situation

OUC began the scholarship pilot work from the year of 2009, and it is still in the exploration stage. 61,000 students have been awarded scholarships by the end of 2014. OUC set up four kinds of scholarship for various groups of students.

Table 1: Scholarships in OUC

Scholarship Types	Reward Objects
OUC school scholarship	Outstanding students in Open education in OUC
OUC “Fields of hope” scholarship	Outstanding students in "one village one college students plan"
OUC education for the disabled IET-sunshine scholarship	Outstanding disabled students in the disabled school in OUC
OUC noncommissioned officer scholarship	Outstanding noncommissioned officers in charge in the Eight One college, the General Staff Academy, Air Force Academy in OUC

Scholarship in OUC plays an important role to encourage students to study hard, complete their studies and mobilize their enthusiasm and initiative, to promote school spirit, style of study construction; has important significance to enhance students' sense of belonging in the school, promote the school brand image and social influence.

2.2 Problems of the Scholarship Fund Management

2.2.1 Single source of funds, low award proportion

Open University system has a large number of students, has 3,550,000 students in nationality till spring 2015. The source of most scholarship fund is the school special appropriation, which is very limited. As a result, scholarship average gain ratio is only about 2.4%, which is very rare for the huge school system covering the whole country. Too narrow scholarship coverage will greatly affect the students' enthusiasm and the incentive function of scholarship.

2.2.2 Single reward amount, low stimulation effect

At present, the award amount of the scholarship in OUC is about US\$156.25/student/year. It is hard to distinguish the outstanding degree of the award-winning students. Facing the rising prices, if the reward maintained long-term, it will be difficult for students to constitute a stimulus and cannot arouse the enthusiasm of scholarship. Less reward will affect the support function, and then the incentive function of scholarship.

2.2.3 Rough management system, low work efficiency

At present, the student work department is mainly responsible for scholarship selection, and the finance department assists to grant the award in OUC. The organization is simple, lacks the monitoring process of scholarship fund collection, payment and other. With the further development of the scholarship, this organization will be difficult to deal with a lot of funds and work, so that a fair, just and accurate management and supervision.

In the course of the transformation and upgrading of OUC, the management of scholarship fund is very important for the establishment and function of the whole scholarship system. This paper found that the main reason in the scholarship work is about the fund management. The existing research focuses on the establishment of the scholarship selection procedure and the function and role of the scholarship (e.g., Sun and Guo, 2010; Di, Jiang and Sun, 2014), and little to research on how to realize the source expansion, the effective use and management of the scholarship fund. This paper mainly explores how to set up the scholarship fund management mechanism in OUC with the characteristics of distance education, by studying scholarship fund obtain, set, appreciation and evaluation, on the basis of the successful experiences of domestic and foreign universities.

3. Experiences in Foreign (Overseas) and Domestic Distance Education Institutions

3.1 Experiences in Foreign (Overseas) Distance Education Institutions

The development of foreign (overseas) distance education colleges and universities is relatively mature, and the scholarships are diversified.

Table 2: Scholarships in Foreign (Overseas) Distance Education Institutions ^{[6]-[11]}

Foreign (Overseas) Distance Education Institutions	Scholarships and Examples		Sources of Funds
Athabasca University	School awards	Doctoral students (27 awards): Alberta Award for the Study of Canadian Human Rights and Multiculturalism - Doctoral, AU Access Fund for Students with Disabilities, AU Doctoral Level Student Bursaries, and so on.	School special funds, government funds, foundations and individual support
		Masters level students (40 awards): Alberta Historical Resources Foundation Research Presentation Awards, AU MBA Faculty of Business Bursary, Cathy Bray Essay Award, and so on.	
		Undergraduate students (93 awards): Alberta Blue Cross 50th Anniversary Bursary, AU Academic Leadership Scholarship, AU Award in Geology, and so on.	
	External awards	Doctoral students (48 awards): Aboriginal Health Careers Bursary, Scholarships Canada, Aboriginal Health Careers Bursary, and so on.	Foundations and other social organizations support, individual support
		Masters level students (93 awards): Canadian Liver Foundation Research Grants, Columbia Institute Scholarships, Ken Thomson Scholarship, and so on.	
		Undergraduate students (77 awards): Canadian Federation of University Women, TAC Foundation Scholarships, Aboriginal Affairs and Northern Development Canada, and so on.	

University of Phoenix	School awards (13 awards)	AMVETS Scholarship, the Milestone Scholar Award, Nevada Excellence in Higher Education Scholarship, and so on.	School special funds, government funds, social organizations and individual support
	External awards	Thousands of 31 types of national scholarships	Foundations and other social organizations support, individual support
		596 States scholarship	
University of Maryland University College	School awards (107 awards)	50th Anniversary Scholarship, Air Force Aid Society, Alumni Association Scholarship, and so on.	School special funds, government funds, foundations and alumni support
	External awards (4 awards)	Cyber security Postdoctoral Fellowship Program, SAIC Cyber security Scholars Program, Scholarship for Spouses and Dependent Children of UMUC Employees, UMUC Adjunct Faculty Scholarship	Government funds and social organizations support
Korea National Open University	School awards (5 awards)	High Scholastic Achievement, Board Member of Student Union, Recipients of Educational Protection, Recipients of Financial Aid, Working Student Scholarship	School special funds, government funds, social organizations
	External awards (2 awards)	Korean Research Foundation Scholarship, Government Scholarships	
The Open University of Hong Kong	Full-time Program Students	School awards (22 awards): AIA Foundation Scholarship, Chan Kwan Ching Prizes, Connie Scholarship, and so on.	Foundations and other social organizations support
		External awards (7 awards): HKSAR Government Self-financing Post-secondary Scholarship Scheme (5 awards), Oxford China Simon Li Scholarship, Ng Kwok King Scholarship, and so on.	
	Distance Learning Program Students	School awards (48 awards): BOCHK - OUHK Scholarship, Chan Hon Kee Scholarship, Chan Tak Education Fund, and so on.	
University of South Africa	Postdoctoral Fellowships in Science, Engineering and Medical Sciences Claude Leon Foundation		Government funds and foundations and support
	The National Treasury External Bursary Scheme		

3.2 Experiences in Domestic Distance Education Institutions

In recent years, the development of domestic distance education institutions is rapid, but there is still the lack of recognition and attention to scholarship. At present, only a small number of colleges and universities set up scholarship systems, which are in the initial stage, and the funds are mostly allocated from school special appropriation.

Table 3: Scholarships in Domestic Distance Education Institutions ^{[12]-[15]}

Chinese Distance Education Institutions	Scholarships	Award Winning Ratio	Award Amount
Distance and Continuing Education Institute of Huazhong University of Science and Technology	Outstanding Student Cadres Scholarship	No more than 5% of the students	US\$62.50/student
	Learning Excellence Scholarship	The first, second and the third prizes are no more than 2%,3% and 5% of the students	US\$93.75, US\$62.50 and US\$31.25/student
	Institute "three good" Student Scholarship	No more than 5% of the students in the Department	US\$15.63 /student
	Individual awards	The proportion is decided by student work department	US\$156.25, US\$125 and US\$78.13/student
College of Extended Education of Hangzhou Dianzi university	Outstanding Student Scholarship	The first, second and the third prizes are no more than 3%,7% and 10% of the students	US\$78.13, US\$46.88 and US\$31.25/student
	Individual awards	The proportion is 2% or 3%	US\$23.44/student
Network Education Institute of Shanghai Jiao Tong University	Excellence Scholarship	The first, second and the third prizes are no more than 1%,3% and 6% of the students	Tuition waiver
	Outstanding Scholarship		US\$156.25, US\$78.13 and US\$31.25 /student
Higher Vocational College of Qingdao university of science & technology	Principal Scholarship	The students who prized "ten outstanding students of Qingdao University of Science & Technology"	US\$312.50/student
	Comprehensive Scholarship	The first, second and the third prizes are no more than 3%,7% and 15% of the students	US\$187.50, US\$109.38 and US\$62.50 /student
	Individual awards	Unlimited	US\$31.25-US\$312.5/student

3.3 Experiences and Enlightenment

It can be seen from the table 2 and table 3, foreign (overseas) distance education institutions attach great importance to scholarship, set up a wide variety of scholarships according to the profession, expertise and other aspects. Many universities provide students with the scholarship not only managed by the school, but also by other social organizations. The sources of scholarship funds are also very rich, including the school special appropriation, government funds, foundations, alumni, individuals and other social organizations support. It is indicated that foreign (overseas) scholarship application scope is very wide; the whole community is very supportive to the development of education to encourage students to learn and progress with a good education funding atmosphere.

There are relatively small scholarships in domestic distance education institutions, and the source of fund is very limited, mostly is the school special appropriate. In addition, the vast majority of scholarships are taken in the form of cash payment, and the level and amount is distinguished. The overall scholarship coverage is more than 25% in most domestic distance education institutions by a rough calculation, which is far higher than the proportion 2.4% in OUC.

These advanced experiences in the domestic and foreign (overseas) distance education institutions are worthy of scholarship fund management and system construction in OUC.

4. Construction of the Scholarship Fund Management Mechanism in OUC

4.1 Open Up Financing Channels

In terms of funds, it is very limited only by the school financial support, and the burden of the school is heavy. In order to build a reasonable scholarship system, expand the visibility and influence of the school, it is necessary to absorb the social financial support. We can expand the sources of funds from the following channels:

4.1.1 National financial funds

National Scholarships not only can supplement the school scholarship fund, but also represents the highest honor, let the students have great incentive. Therefore OUC can apply for scholarships from the state, based on budget earmarked, issue National Scholarships to the best students in the school. In addition, because the OUC system involves a lot of provinces, cities and countryside in the country, it can also seek help from the corresponding levels of government.

4.1.2 Social organizations donation

OUC is the new kind of university without wall, using modern information technology as a support for all members of the country, to promote educational opportunities fair and the upgrading of national quality. Society should not only pay attention to the elite schools, but also focus on open education, vocational education, and the country's most popular schools with the most students. The funds used in this school will get greater benefit in terms of reputation, influence, etc...Social organizations are very wide, and they are all the important sources of funds the school can develop.

4.1.2.1 Enterprise Donations

Enterprise scholarship to colleges and universities is the talent strategy taken by a lot of enterprises; it can increase the economic and social benefits. Now OUC and industries, enterprises and cities have formed "the four-major union" to strengthen cooperation. We can take the way of directional training and cooperative education, then the graduated students with learning aid and scholarship can enter the enterprise under the agreement. So that not only recommend our outstanding students to the enterprise, solve the employment problem, but also transport talents to enterprise to solve the problem of information asymmetry between the two sides.

The characteristics of the open education should be fully considered while searching the scholarship fund from enterprises. Most students in OUC are on the job, have more social experiences and social relations. Dig their role, taking the initiative to contact their work companies. The more companies understand OUC and distance education, the more support the development of our education and scholarship work.

4.1.2.2 Foundation Donations

Foundation has a more mature system of donation management, has a wealth of experiences and social resources, and is more professional and flexible. By 2015, OUC received scholarship fund to the Disabled College donated by the IET Educational Foundation. Now OUC disabled sunshine education scholarship by the IET title. We should publicize and promote the development of distance education and OUC, introduce their characteristics and value, so that get more funds to support the development of scholarship work.

4.1.2.3 Alumni Association and Alumni Donations

Alumni association is an important social resource in colleges and universities, is the bridge and link between alma mater and alumni, alumni and alumni, and is the most valuable wealth and the most reliable power to promote the alma mater development. There is not any alumni association in OUC, but its establishment is feasible and necessary. OUC has the most students and graduates; they come from all corners of the country and industries. The establishment of the alumni association can give full play to the characteristics of OUC, and expand the influence of the school and the cohesion of the students. Therefore, the construction of alumni association should be on the agenda, through alumni donations, increase the scholarship fund. At the same time, we should pay attention to the cultivation of the culture of the school, so that students and schools have close relationship, and then this tradition will continue and form a virtuous circle.

4.1.2.4 Other Benefits

If OUC receive more scholarship fund from social organizations, except the annual payment after the remaining, can be financial managed by the financial sector or related departments. Appropriate investment under the legal compliance can increase scholarship fund in value. These gains are used to enrich the scholarship fund, on the one hand as the future scholarship, on the other hand as a reserve fund to meet the sudden reduction in other sources of the future, as well as the increase of the award amount

4.2 Rationalize Scholarship Fund Management System

4.2.1 Set organizational structure

At present, the student work department is mainly in charge of the scholarship system management and assessment in OUC and the financial department provides assistance. With the expansion of the amount of fund and the need to strictly manage, it should improve the fund management system. The independent OUC Scholarship Committee established as the scholarship management department. Scholarship Committee includes the Council and the Board of Supervisors as the third party. Scholarship Committee consists of Student Work Department, Finance Department, Alumni or External Propaganda Department and the Secretariat.

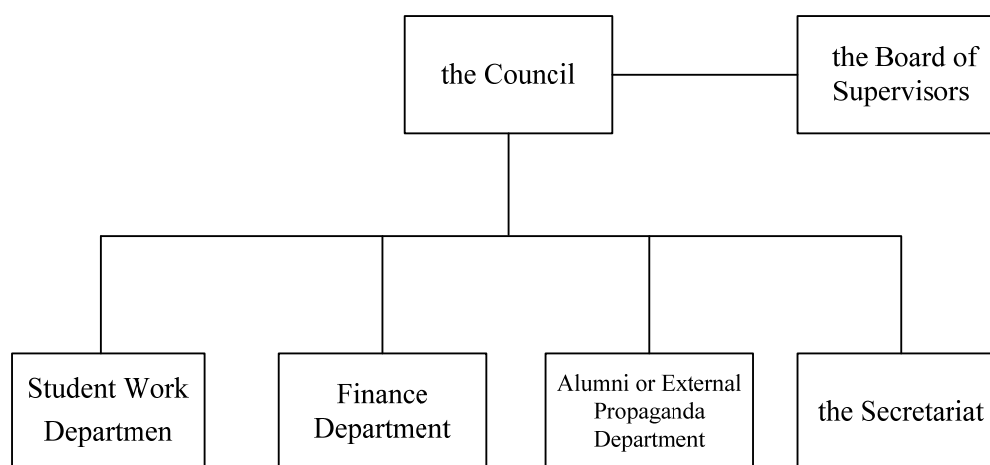


Figure1: Scholarship Committee in OUC

4.2.2 Department responsibilities

The Council is responsible for the overall work, formulates regulations of the scholarship committee in OUC, and supervises and controls the work of the Committee as the representative of the Committee.

The Student Work Department is mainly responsible for the development of scholarship standards, and maintains communication and contact with all levels of branches. According to the standard requirements, the student work department reviews and final evaluates the award winning students' qualification applied by the branches, and properly handles, follows up, supervises and evaluates after the granting.

Finance Department is responsible for the safekeeping and payment of the scholarship, management of the scholarship fund balance and preservation of value, and to ensure the safety of funds in the process.

The Alumni Association is responsible for contacting with each session of the alumni, get support at the same time. External propaganda department can also promote outstanding students in OUC to social publicity to get help from enterprises, foundations and other organizations.

The Secretariat is responsible for the communication and coordination among the various segments of the council, and related business processes.

The Board of Supervisors shall be responsible for the supervision of the work of the committee as the third party, to ensure that the funds and the process of acquiring and using are legally.

All organizations are not only closely related to business, but also mutual assistance and supervision. A sound management system is also sound financial management system, will help fund management and scholarship work to be normal and efficient.

4.3 *Strengthen Process Supervision*

All departments in OUC scholarship committee should carry out their duties, strengthen the process of supervision. In the course of scholarship evaluation and payment, not only to ensure that the entire process is fair and open, but also to ensure the safety and accuracy of the funds. All scholarship funds are unified managed by the finance department. If the fund has a slight surplus, the finance department can increase the value in the scope of the policy. In the whole process, strengthen the management of internal control and the supervision of the board of supervisors as the third party.

4.4 *Set the Scholarship Level and Type*

Establishing different levels of individual scholarships to increase the coverage ratio, and as far as possible opening the gap to increase the students' motivation, and promote the full development of students.

4.4.1 Set scholarship level

At present, the scholarship in OUC is only US\$156.25/ student / year for one level. It is difficult to distinguish the excellence degrees of the winners, and hard to stimulate the role of students. Therefore, it is necessary to set different scholarship levels and amounts. Now, the National Scholarship is highest for US\$1250 / student / year. In the case of ample funds, except corporate scholarship has a special designation according to their investment situation, it is suggested that US\$156.25- US\$1250 is set for three or four levels, and corresponding awards. Such not only opened the level of the scholarship and students' excellence degrees, but also motivated students to continue their efforts to higher level of scholarship.

4.4.2 Set scholarship type

At present, OUC scholarship is divided into four kinds according to the student class, the average proportion of the award is low, the coverage is narrow, and the guide and incentive effect to students is insufficient. Based on the needs of nation and school development, a number of scholarships should be set up to increase the proportion of winning, so that more students from different teaching points, profession, nationalities can participate and get. For example, if one profession is needed by national development, yet willing to learn this profession students are few, we can set the scholarship appropriate tilt, encourage and attract more students to learn it; if the number of students enrolled in a certain subject is large, we can appropriate increase the proportion of awards; we can increase the proportion of awards to the students in poor areas of the west; and we can set up a class of scholarship based on the intention of the donor and the school.

4.5 *Scholarship Granting Follow-Up Evaluation*

After the annual scholarship granting, tracking evaluation management should be taken. Pay a return visit to the winning students to understand the issue of scholarship. We can statistically analyze the amount and range of scholarships; analyze the situation of winners and branches after receiving the awards, and regular make the receiving, granting and balance of scholarship fund public. Sum up the experiences and lessons and guide the follow-up work to improve the scholarship fund management system.

5. Conclusion

First of all, attracting and managing the scholarship fund needs national and social support, should form the atmosphere of encouraging and supporting the development of education in the whole society. The government should provide more funds and resources to schools, and encourage social organizations and individuals to give more help; solve the problems and difficulties during the donation, and give the corresponding recognition of the outstanding donations enterprises and individuals.

Secondly, it is suggested establish a suitable scholarship system and process, combined with the characteristics of distance education and OUC. Pay attention to the correct and safe use of funds, meets the needs of the scholarship payment and maintenance as the premise, hold and increase the value of funds. Carries on the process monitoring to the scholarship, and carries on the track and evaluation to the scholarship fund regularly. On the basis of good school construction and student training, vigorously promote to absorb social donation initiative. Establish the idea of opening up; create a good atmosphere and tradition to get a higher degree of social attraction.

Thirdly, building the scholarship fund management mechanism with OUC characteristics, sustainable development in the new development mode of OUC, can provide a strong help to improve the school's scholarship system; can provide a reference for the fund management mechanism of other works in the school; can improve the economic and social benefits of the school, and promote its healthy development.

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A RESEARCH ON THE NEW PARADIGM OF OPEN UNIVERSITY SCHOOL SYSTEM

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Abstract

Innovating education system is essential for the transformation and upgrading of Radio and Television Universities. The basic models of educational structure in today's China are "University+Platform+System" and "System=Headquarter+Secondary College". It is a question whether the system suits the future development of the Open Universities. To answer this question, the paper summarizes basic models and characters from seven universities, such as British Open University, Japan Broadcasting University, Korea National Open University, India Open University, and applies the "Principal-Agent" Theory to analyze the gains and losses in practice in terms of the construction of Radio and Television Universities. Finally, based upon the analysis, the paper proposes a new model of education system which invites cooperation from three parties including government, society and market, with an emphasis on the incentive and restraint mechanism. The new paradigm is expected to serve a theoretical reference to system innovation and future construction of Open Universities.

Keywords: *Open University; System Innovation; New Paradigm*

An exploration of the Open University model is the task of the Chinese education system reform. Long-term Education Reform and Development Plan (2010--2020) sets up the overall goal of running an open university. To implement this goal, we must earnestly have a top-level design of the Open University. In the pilot construction of six Open Universities started in China at present, the construction of the school system is one of the top designs pushing Radio and Television Universities to consider when an open university should "upgrade" to explore the Open University model, one of the important contents. This paper is concerned with the school system construction model based on open universities at home and abroad, and research of this kind has important theoretical and practical significance for the construction of the school system in Yunnan Open University,

1. The Basic Structure of the Open University System

The Open University system occurred in the middle of the past century, as a product of the development of lifelong education thoughts. More and more attention has been paid to the system the world over. British Open University, Japan Broadcasting University, Korea National Open University, Open University of Malaysia, Open University of Hong Kong are the earlier ones that have developed very fast and enjoyed a more successful development. The school systems have adopted the basic central control management architecture, namely the three management frameworks from school headquarters, regional centers and learning centers. Headquarters, through local grade school management policy administration, transfer teaching and learning support services and other types of transactions to regional centers and learning centers. A regional center, as the link between schools

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and learning centers and the headquarters, is responsible for coordinating the relationship between learning centers and provides support for learning centers.

Iran Open University and Sukhothai Open University apply organizational and management structure model of decentralized control. In addition to the school headquarters, there is a sub-center hub under the regional center. Headquarters give relative autonomy to the sub-centers. India's federal system of Open University management structure is composed of Indira Gandhi National Open University and 15 state open universities. The state Open Universities have their own management and self-government system, and accept the guidance and coordination from the National Open University.

China National Open University has as its predecessor the Central Radio and Television University, which had gone through thirty years of exploration and practice and had formed the school system of central-to-local overall planning, grading schools, grade management, division of labor. It has formed a system consisting of the Central Radio and Television University, 44 provincial radio and television universities, more than 1,100 city-level Radio and TV Universities, nearly 2,000 county-level radio and television universities, covering urban and rural areas of our country, being the world's largest multi-level educational system. This system, in China's compensation period, ensured the quality of teaching and school effectiveness and became a prominent and important feature of the advantages of China Radio and Television University. But with the economic and social development, transformation of economic development pattern, people's new multi-level spiritual and cultural needs, the adjustment of the education system, lifelong learning, the deepening of the concept of community education, and a series of other changes, the multi-level system of education with a single school system held by Radio and Television University is facing an unprecedented new situation which is more complex than ever before.

Shanghai Open University is established on the basis of Shanghai Radio and Television University, and the integration of open resources and adult education resources in the region. It has a "university + system + platform" mode, a "university - college - learning center" three-tier system. Beijing Open University, Jiangsu Open University, Guangdong Open University are in constant innovation and have developed their respective characteristics of the school system.

From what are illustrated above, we can see domestic and foreign Open University systems do not have a fixed pattern. There are some national and regional differences and characteristics which are caused by their respective existing situations. Open universities abroad have a common characteristic: school autonomy of education under legislation. The school system of Yunnan Open University should be based on China's national conditions and the particular local conditions in Yunnan.

2. A Review of the Old System Applied in Yunnan Open University and Thoughts of the New System Construction

Applying the principal-agent theory to the construction of the Open University system, you can take the following measures: First, the levels should be reduced, and a direct management of the provincial school secondary colleges and learning centers (management level for the two) should be used. A moderate radius can improve management efficiency. Second, supervision should be strengthened and information feedback mechanism should be established and improved. Open University education should be a starting point for a lifelong education and a learning society. A lifelong education (open education) office can be set up in Yunnan Provincial Department of Education and in sixteen states (City) and part of the county Board of Education. The office can send cadres to advance the work in order to carry out effective horizontal coordination and vertical communication. Third, an incentive and restraint mechanism should be established and a performance management system should be implemented, and responsibilities, rights and interests should be made clear. A scientific performance management can straighten up the relations between provincial open universities, local secondary colleges and learning centers to achieve a win-win situation between them both socially and economically. Fourth, in terms of public education costs, according to the principles of fair

negotiation, the "property rights" and "powers" should be unified and more income should be left to the colleges and learning centers to allow them more development opportunities. Fifth, an exit mechanism and a rating system should be implemented to promote a healthy development system. Sixth, characteristics and culture of Yunnan Open University should be cultivated based on a common vision and values to increase the cohesion of the system.

3. The Progress of the School System Construction of Yunnan Open University

Yunnan Open University is an important carrier of lifelong education system and bears important responsibilities in building a learning society in Yunnan Province. Yunnan provincial government is very concerned about the construction of the pilot work of Yunnan Open University. Yunnan Open University, learning from its TV experience in building school systems, has developed its TV system characteristics and advantages on the basis of reform and innovation. New concepts applied, a major breakthrough in reform and mechanism innovation, pilot, etc. has been made to achieve the transformation and upgrading of the school system. By March 2014, 16 states (cities) had all approved the establishment of two colleges. The pilot construction of the Learning Center has started in Honghe Prefecture, Qujing, Zhaotong City, and ten other cities in western Yunnan. The overall framework of Yunnan Open University has been initially completed, and 25 colleges have been approved, all of which have their own characteristics. From the point of view of integration of educational resources, professional and vocational schools of a large scale and strength have been established. There are also vocational education parks, based on the establishment of vocational education center of Yunnan Open University. There also occur institutions which integrate social forces and school educational resources related to the composition of Secondary Academic Alliance. College types cover both ordinary local secondary colleges and industry Secondary College. Administrative divisions include both city secondary colleges and district level secondary colleges. The system has benefited both the general public in colleges and special populations (people with disabilities). Yunnan Open University system fully reflects the features of integrity, collaboration, diversity and openness.

4. The Deepening of the Reform of Open University System

Open University system construction has proved to be successful. But to further promote lifelong education system, a new paradigm of Open University system in the three dimensions of government, market and society should be established.

The construction of Open University system in the dimension of government needs to be emphasized. An Open University bears the responsibilities of conducting lifelong education and building a learning society, so it deserves the attention of governments at all levels in order to get more policy support and funding. To set up educational administrative departments at all levels of lifelong education (open education) offices, to set aside special funds each year, and to send cadres to advance the work, Open Universities should construct the school system in the market dimension, establishing an effective incentive and restraint mechanism, a scientific performance management between headquarters, two colleges and learning centers, forming benefit sharing, risk sharing intimate system. In the social dimension, the Open University system needs to take full account of the needs of society and social benefits, at the same time maintains its basic characteristics, to better serve the whole community. The establishment of appropriate secondary colleges or learning centers in the Open University system for persons with disabilities, migrant workers and other special groups, for example, is a good try.

From the above-mentioned, a research on the construction of the new paradigm of Open University school system is a worthy subject deserving our effort.

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Sub-Theme 2

Technology as Drivers of Open and Distance Learning (ODL)

PROCEEDINGS

EMERGING TECHNOLOGIES ACCEPTANCE IN ONLINE TUTORIALS: TUTORS' AND STUDENTS' BEHAVIOR INTENTIONS IN HIGHER EDUCATION

Adhi Susilo

Abstract

Tutors' and students' intentions to use emerging technologies (ETs) in e-learning systems in higher education institutions are a central concern of researchers, academicians, and practitioners. However, tutors' and students' intentions to use ETs in e-learning systems in distance learning are relatively low. The study was to investigate the factors that may affect tutors' and students' intentions to use ETs in online tutorials. A Web-based survey was designed to empirically assess the effect of the aforementioned constructs on tutors' and students' intentions to use ETs in online tutorials. The statistical analysis results showed that the theoretical model was able to predict instructors' and students' intention to use ETs in online tutorials. However, not all three independent variables showed significant relationships with the dependent variable. Results of MLR analysis was consistent on technology competencies (TC) as having the greatest weight on predicting instructors' and students' intentions to use ETs.

Keywords: *Emerging technologies, technology acceptance model, online tutorial*

Introduction

The incorporation of emerging technologies (ETs) in education is an acknowledgement of the profound influence technology has on all aspects of human life, and there is a critical need for all individuals to develop at least minimal levels of understanding of technology and what it means for their lives (Custer, 1995). ETs and their potential to foster unique types of learning have become a special issue in the last two years. ETs refer to tools, concepts, innovations, and advancements that are utilized in diverse educational settings to serve varied educational purposes, and that can be described as evolving organisms existing in a state of “coming into being” (Veletsianos, 2010).

The development of sophisticated computers and technology in general has changed the essence of distance learning delivery. The programs mentioned in the developing countries, particularly in Indonesia, are intended to ease the shortage of teachers. These programs have been around for more than 25 years in the Open University of Indonesia (Universitas Terbuka/UT). Universitas Terbuka (UT) is a 45th state university in Indonesia which provides distance learning, particularly for in-service teachers, workers, and fresh high school graduates (Zuhairi, Wahyono, & Suratinah, 2006). UT was established in September 4, 1984 as a one of the Indonesian Government's national strategies to improve participation in higher education. In 2012, UT enrolls more than 650.000 students, residing in different parts of the country; most of them are working adults.

UT has the challenge to provide educational quality excellence at a distance for students who have different levels of economic capacity, access to information and communication technology (ICT) facilities and limited ICT literacy (Zuhairi, Adnan, & Thaib, 2007). Therefore, UT provides online services to support students' learning. The services include online counselling, online tutorials and, more recently, an online examination system. According to Zuhairi et al. (2007) the provision of learning support systems is crucial in making students successful in distance learning.

This research explores tutors' and students' behavioral intentions as factors affecting their use of emerging technologies in their distance learning and how these behavioral intentions reflect changes in their educational beliefs and actual learning practice. It is believed that teachers are the important persons in changing the educational world, particularly in the learning and teaching processes. On the other hand, students might perceive the value of emerging technologies for improved learning

differently and fail to understand the role of technology in transforming their courses (Bessier, Kurt, & Reinhart, 1997).

The specific research questions addressed were:

1. To what extent does emerging technologies reaction (ETsR), emerging technologies understanding (ETsU) and technology competencies (TC) contribute to tutors' and students' intention to use emerging technologies in online tutorial?
2. Which construct out of the three independent variables (ETsR, ETsU, or TC) provides the most significant contribution to tutors' and students' intention to use emerging technologies in online tutorial?

The main goal of this study is to empirically investigate the contribution of tutors' and students' ETsR, ETsU, and TC to their intention to use emerging technologies in distance learning, as measured by the weight of their contributions to the prediction of BI. A secondary, but related purpose of this study is to identify, from the tutor's and student's perspective, the key factors that encourage or inhibit tutors and students to embrace emerging technologies in online tutorial. Thus, the relevance for the current study was that it investigated factors that contribute to tutors' and students' acceptance of emerging technologies that has been developed specifically to respond to current demands of open and distance learning. In order to provide a solid theoretical basis for examining the important antecedents for ETs usage, this study integrates the classification of technology competence levels from Tomei (2005), learning and training evaluation theory (Kirkpatrick, 1998) and two important streams of literature under the structure of the theory of reasoned action (TRA) (Fishbein & Ajzen, 1975): the technology acceptance model (TAM) (Davis, 1989; Davis, Bagozzi, & Warshaw, 1989) and the theory of planned behavior (TPB) (Ajzen, 1991). It also uses the diffusion of innovations theory (Rogers, 1983).

This investigation may make a useful contribution to the growth and development of strategies that might help higher education institutions introduce online education programs that speak to the specific needs and interactions of their teachers and students. Thus, the significance of the current study lies in investigating key constructs that are contributing to tutors' and students' intentions to use emerging technologies in distance learning. As a result of the information provided by these findings, tutors and students in higher education institutions will be able to accommodate emerging technologies into curriculum reform to embrace distance education as a valid delivery method. Furthermore, the appropriate emerging technologies will be refined and developed to support tutors and students training programs as a result of the findings of this study. The findings of this study could also be used in broader studies focused on the instructional emerging technologies that integrate ICT into learning support materials for designing effective distance learning process.

Theoretical Framework

The objective of this study is to uncover the important factors affecting the tutors' and students' behavioral intention to use emerging technologies. In order to provide a solid theoretical basis for examining the important antecedents for ETs usage, this study integrates the classification of technology competence levels from Tomei (2005), learning and training evaluation theory (D. L. Kirkpatrick, 1998) and two important streams of literature under the structure of the theory of reasoned action (TRA) (Fishbein & Ajzen, 1975): the technology acceptance model (TAM) (F. D. Davis, 1989; F. D. Davis et al., 1989) and the theory of planned behavior (TPB) (Ajzen, 1991). It also uses the diffusion of innovations theory (E. M. Rogers, 1983).

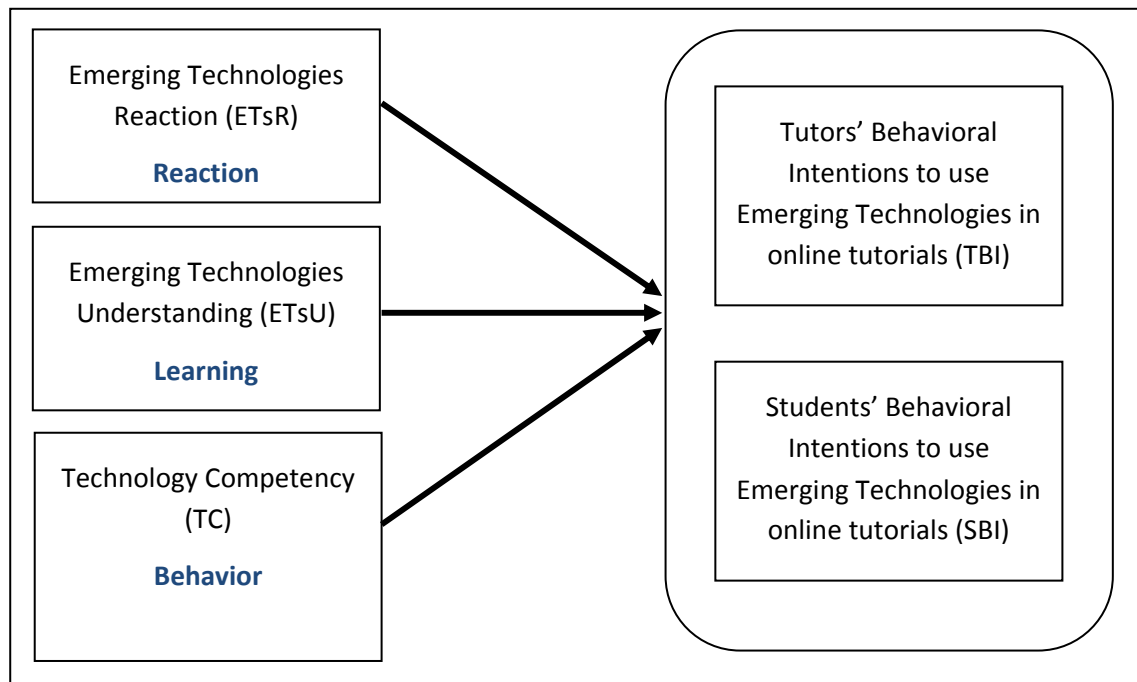


Figure 1: The Conceptual Research Map

In TAM, behavioral intention is determined by attitude towards usage as well as by the direct and indirect effects of two system features: perceived usefulness and perceived ease of use (F. D. Davis, 1989, 1993). The value of TAM in technology-adoption research has been consistently important and widely accepted (Bernadette, 1996; Venkatesh & Davis, 2000). However, as E. M. Rogers (1995) argues, diffusion of innovative technology is highly related to communication channels, individuals, organizational members, and social system in addition to the technology itself. It is clear that technology acceptance could only be partially explained by TAM since both human and social factors should also be incorporated and considered simultaneously (C.-D. Chen et al., 2007). Therefore, together with TAM, TPB is selected to provide a necessary theoretical premise for the research model examined in this study.

Literature Review

Theoretical Foundation

Integrating technology into the learning process encompasses more than teaching basic computer literacy or using technology for collaboration and decision-making. Lawrence Tomei (2005) developed a classification for technology levels to correspond with the taxonomy levels of Bloom's taxonomy. Tomei includes six progressive levels for classification of objectives, and includes specific verbs to activate thinking and learning at each level: (1) **Literacy**: this level is the minimum degree of competency expected of teachers and students with respect to technology, computers, educational program, office productivity software, the Internet, and their synergistic effectiveness as a learning strategy; (2) **Collaboration**: learners are able to employ technology for effective interpersonal interaction such as word processing, desktop publishing, email, and newsgroups; (3) **Decision-making**: helps the learners to use technology in a new and concrete situation to analyze, assess and judge via technology through spreadsheets, brainstorming software; (4) **Infusion**: learners analyze available technology, and identify, harvest, and apply technology to learning strategies; (5) **Integration**: learners create new technology-based learning material; and (6) **Tech-ology**: learners are able to appraise, argue, judge, assess, compare, and defend the universal impact, shared values, and social implications of technology and its influence on teaching and learning.

This study explores issues and concerns relating to the pedagogical uses of certain emerging technologies for learning across the curriculum—particularly distance learning. Within the classification of technology domain proposed by Tomei's taxonomy and the technology acceptance evaluation model proposed by D. L. Kirkpatrick (1994, 1998), there is a need of a paradigm shift beyond the acquisition of tools (i.e., literacy), their use for communication (i.e., collaboration) and decision-making if tutors and students want to get the benefit of a greater access to technology. A review of the literature has suggested that the integration of technology into teaching and learning is typically affected by the following four factors: teachers' technology skills, teachers' technology beliefs, teachers' perceived technology barriers (Hew & Brush, 2007) and "authentic experiences" (Brush & Saye, 2009).

Kirkpatrick's model provides a strong basis for examining factors that contribute to users' (teachers and students) acceptance of technology. Kirkpatrick's model represents a sequence in which technology acceptance can be evaluated. A meta analysis by Alliger, Tannenbaum, Bennet, Traver, and Shotland (1997) examine the results of 34 studies that yielded 115 correlations among the four levels of training evaluation. The researchers augmented Kirkpatrick's model by further dividing reactions into affective reactions and utility judgments. Affective reactions reflect how much the trainees liked or enjoyed the training. Utility judgments reflect the perceived usefulness of the training. Utility reactions had a significant correlation with learning ($r=0.26$). Reaction measures that combined affective and utility measure also correlated significantly with learning ($r=0.14$). The way in which Kirkpatrick (1998) and Alliger et al. (1997) perceive the learning process will be used in this study.

Kirkpatrick and Kirkpatrick (2006) describe the four levels of learning in their evaluation model as representative of a sequence of ways to evaluate instruction and learning support material. Kirkpatrick suggest that with each progressive level, evaluation becomes more difficult, but more useful information is obtained (Kirkpatrick, 1998).

Level 1: Reaction. Reaction may be defined as how well learners like instruction and instructional material or parts thereof. According to Kirkpatrick and Kirkpatrick (2006) learners' initial reaction to instruction will influence the quality and quantity of learning that takes place. Kirkpatrick (1998) emphasizes that a positive reaction may not guarantee learning, but a negative one will almost certainly preclude it. How much they enjoy it, and how easy and understandable they find it, will be reflected in affective expressions of general satisfaction (Alliger et al., 1997), which will cultivate a positive attitude towards instructional material.

Level 2: Learning. Kirkpatrick considers learning as change on an intellectual level, namely increasing knowledge, developing or improving skills and changing attitudes (Kirkpatrick, 1998). Alliger and Janak (1989, p. 331) defined level 2 as "principles, facts, and techniques understood and absorbed by the trainees". According to Kirkpatrick no change in behavior will occur without learning. Learning can also refer to which principles, facts, elements and techniques were understood and absorbed by learners (Clementz, 2002).

Level 3: Behavior. Behavior is regarded as the extent to which change in behavior has occurred because the participants attended the training program (Kirkpatrick & Kirkpatrick, 2006). True learning can be considered to have taken place when knowledge and skills learned in one domain are applied in another situation (Osman & Hannafin, 1992). The implication is thus that change in behavior is constituted by demonstrated transfer and application of knowledge, skills and attitudes in new situations (Kirkpatrick, 1998). According to Kirkpatrick, behavior cannot be changed unless learners' have had the opportunity to demonstrate it. He also claimed that it is impossible to predict when a change in behavior will occur. Change can take place at any time, ranging from immediately after the intervention to a situation where it may never happen. However, behavior can only be changed if transfer of knowledge has taken place (Kirkpatrick, 1998). To assess this level, an

evaluator must determine whether participants' new knowledge, skills, or attitudes transfer to the job or another situation, such as a subsequent course.

Level 4: Result. Result refers to the achievement of goals of training in terms of reduced costs, higher quality, increased production and lower rates of employee turnover and absenteeism. It is not possible to evaluate "results" as it is difficult to measure and is hard to separate from another variable. The fourth level could refer to assessing how students perform on the job after graduation.

As such, the first two levels are the most often examined by trainers and researchers because they are more immediate and are often easier to measure. Therefore, this study will focus on exploring the utility of the reaction and learning measure, and the third level will also be examined to get better and detail evaluation. Due to time limitations, level 4 will not be investigated.

Technology Acceptance

In technology acceptance model (TAM), behavioral intention is determined by attitude towards usage as well as by the direct and indirect effects of two system features: perceived usefulness and perceived ease of use (Davis, 1989, 1993). The value of TAM in technology-adoption research has been consistently important and widely accepted (Bernadette, 1996; Venkatesh & Davis, 2000). However, as Rogers (1995) argues, diffusion of innovative technology is highly related to communication channels, individuals, organizational members, and social system in addition to the technology itself. It is clear that technology acceptance could only be partially explained by TAM since both human and social factors should also be incorporated and considered simultaneously (Chen, Fan, & Farn, 2007).

The first factor identified in the literature as a possible contributor to intention to use technology was emerging technologies reaction (ETsR). The term of "emerging technologies reactions" is created to define specific perceptions and attitudes on emerging technologies. In this study, I assume emerging technologies reactions as somebody's instant response to emerging technologies during the learning process. The responses can be negative, positive or neutral. This concept is similar to technology perceived enjoyment, which is defined as the degree to which the activity of using technology is perceived to be enjoyable in its own right apart from any performance consequences that may be anticipated (Davis, Bagozzi, & Warsawa, 1992). Within the framework of the TAM, they recommended that perceived enjoyment is similar to intrinsic motivation which drives the performance of an activity that is not linked for any reason other than the process of performing the activity per se, whereas extrinsic motivation refers to "the performance of an activity because it is perceived to be instrumental in achieving valued outcomes that are distinct from the activity itself" (p. 1112). They found that usefulness and enjoyment were significant determinants of behavioral intention.

According to Alliger et al. (1997) to assess "reactions" is to ask users how they liked and felt about training. In addition, reactions were emotionally based opinions or instant response. Alliger and Janak (1989) suggested that reaction measures that directly ask users about the transferability or utility of the training should be more closely related to other criteria than would reactions measures that ask about "liking". Alliger et al. (1997) have broken reactions into two basic components, affective and utility reactions and they also combined these components into third component. The first component, reactions as affect, referred to liking of using emerging technology. For example, "I found this emerging technology to be enjoyable" is a typical reaction item. The second component, reactions as utility judgments, attempted to ascertain the perceived utility value or usefulness. It is made operational by asking such questions as "To what degree will this emerging technology influence your ability later to perform your job?"

According to the literatures, although researchers have generally agreed that ETsR plays an important role in technology acceptance among tutors and students, research results have generally been mixed and additional research as it relates to acceptance of online learning systems is needed (Fuller, Vician, & Brown, 2006; Saadè & Kira, 2006). ETsR has also been identified a stumbling block for instructors in integrating emerging technologies into education programs and, according to Yang, Mohamed, and Beyerbach (1999), ETsR was one of the main reasons for limited instructor technology acceptance. In addition, many studies have been conducted to assess the factors that influence instructors' acceptance of emerging technologies (Ball & Levy, 2009; Brill & Galloway, 2007; Bruess, 2003; Kamla Ali & Hafedh, 2010; Oncu, Delialioglu, & Brown, 2008). Although research to investigate the students' intention to use technology has been accomplished (Bhrommalee, 2011; Edmunds, Thorpe, & Conole, 2012; Luan & Teo, 2011; McCaslin, 2009; Popescu, 2010; Pynoo et al., 2011; Teo, Luan, Thammetar, & Chattiwat, 2011), further investigation is needed to reveal the ETsR on students' intention to use ETs in online environment. Thus, the contribution of ETsR to instructors' and students' intention to use ETs in online tutorial is important as an area of investigation.

The second factor identified in the literature as a possible contributor to intention to use technology was emerging technologies understanding (ETsU). Emerging technologies understanding is a component of learning that is indexed by results of traditional tests of declarative knowledge. Alliger et al. (1997) incorporated three subcategories of learning: knowledge that is assessed immediately after training, knowledge that is assessed at a later time, and behavior demonstration assessed immediately after training. This study only used the first and second category. Immediate post-training knowledge is usually assessed by multiple choice test responses, answers to open-ended questions, listings of facts and so forth. Knowledge retention is assessed at a later time rather than immediately after training (Alliger et al., 1997). Emerging technologies understanding in this study is also assumed as the way users of ETs understand and enhance their knowledge of ETs in educational contexts. My study refers to self-efficacy with regard to ETs—the confidence shown by tutors and students in their own ability to utilize these ETs in online tutorials—which possibly influences perceived ease of use and acceptance of ETs.

Research generally suggested that ETsU was a significant direct and indirect contributor to individuals' intention to use technology (Agarwal & Karahanna, 2000; D. Compeau, Higgins, & Huff, 1999; D. R. Compeau & Higgins, 1995; Havelka, 2003). Thus, the contribution of ETsU to instructors' and students' intention to use ETs in online tutorial is crucial as an area of investigation.

The third factor identified in the literature as a possible contributor to intention to use technology was technology competencies (TC). This study uses the term of technology competencies (TC) to describe the user's experience with, ability to select and apply, and capacity to explore information and communication technology (ICT), especially with computers, to solve problems. There are several ways in which computer experience can be defined and conceptualized. In general, computer experience can be considered to be an act where users engage in applications that are often centered on computers. In addition, computer experience also can be defined in two different ways: as perceived use and variety of use. "While perceived usage refers to the amount of time spent interacting with a microcomputer and [the] frequency of use, variety of use refers to the importance of use and the collection of software packages use" (Igbaria, Guimaraes, & Davis, 1995, p. 109). Essentially, the computer would often be a tool for wider and more diverse use. Users are increasingly using computers for information retrieval, data analysis, programming, word processing, creating graphics, and communicating using electronic mail or online conferencing.

Technology competencies also incorporated transferability to emphasize the on-the-job skill performance. According to Alliger et al. (1997) a measure was classified as "transfer" whenever it appeared that the measure was not only taken some time after training, but that it was in fact some measurable aspect of job performance. For example; work samples, work outputs, and outcomes. Behavior that was retained and applied to the workplace was considered transfer (Alliger et al., 1997). There was a consensus among researchers that technology competencies (TC) played a significant role in technology acceptance (Taylor & Todd, 1995; Thompson, Compeau, & Higgins, 2006;

Venkatesh, Morris, Davis, & Davis, 2003). Thus, this study investigated the contribution of TC to instructors' and students' intention to use ETs in online tutorial.

Behavioral Intention (BI) is a measure of the strength of one's intention to perform a specified behavior (Fishbein & Ajzen, 1975). A motivational perspective has also been widely used to understand individual behaviour. It can be defined as the degree to which people believe that using a particular system would enhance their job. In more wide definition, motivation can be described as the force which propels us in anticipation of intrinsic or extrinsic rewards of benefits. Davis et al. (1992) found that intrinsic motivation (enjoyment) and extrinsic motivation (usefulness) were key drivers of behavioral intention to use computers. The intrinsic motivation factor (enjoyment) not only had a positive effect on the extrinsic motivation factor (usefulness), it also had a positive effect on the intention to use information technology (Atkinson & Kydd, 1997; Venkatesh, 1999).

Methodology

In order to address the specific research questions noted above, an online survey instrument was adapted from the Brush, Glazewski, and Hew (2008) instrument to measure pre-service teachers' technology skills, technology beliefs, and technology barriers. The instrument was modified to accommodate the evaluation model of Alliger et al. (1997) and Kirkpatrick (1998), translated into the Indonesian language to provide clear understanding to respondents, and then provided in an online form. In addition, the instrument was evaluated in terms of reliability and validity. The open-ended questions were embedded in the online form to investigate ETs' barriers and challenges in online tutorial. Behavior Intention (BI) was measured using the instrument developed by Chen et al. (2007) and Ball and Levy (2009).

A Web-based survey was designed to empirically assess the effect of the aforementioned constructs on tutors' and students' intentions to use ETs in online tutorials. The web-based survey was developed as a multi-item measure using Likert-type scales. Existing validated scales were used to develop the web-based survey. The target population of this study was tutors and students of the Open University of Indonesia (Universitas Terbuka-UT). This constituted 436 potential survey tutor participants and 3,385 student's participants. I collected 159 responses from tutors (126 fully completed), representing a response rate of approximately 36.5% and I collected 1,734 responses from students (1,201 fully completed), representing a response rate of approximately 51.2%. Multiple Linear Regression (MLR) statistical analysis was used to formulate models and test predictive power. SPSS 19 was employed to analyze the data in this study.

Results and Discussions

Demographic Analysis

To provide useful and accurate answers to the research questions, the sample used must be representative of the population (Sekaran, 2003). In order to determine the representativeness of the sample, demographic data were requested from the survey participants. The population of all instructors who participated in online tutorial in 2012.1 academic years at the UT consisted of approximately 54.5% males and 45.5% females. The respondents in the final data set were approximately 46% male and 54% female. Similar to the data distribution of tutors, the distribution of the student datas collected appears to be representative of the population of students at UT. The population of non-teacher training students at UT consisted of approximately 51.6% males and 48.4% females. The respondents in the final data set were approximately 59.2% male and 40.8% female. More than eighty-six percent of the population of non-teacher training students at the university were 40 years of age or younger, with 52.5% of the potential participants between the ages of 17-28. Eighty-eight percent of the respondents in the final data set were 40 years of age or younger, with 54% of the population of non-teacher training students at the university between the ages of 17 – 28.

The distribution of the data collected appears to be representative of the population of instructors at the university.

Technology Skills Analysis

Specific technology skills have been identified as a major factor affecting technology acceptance. The tutors in this study in general had high technology skills in communication and information retrieval, but low technology skills in creation. They felt most comfortable using communication and information retrieval technology. They also were fairly confident in their mastery of basic emerging technology operations.

The results from student data are similar to the data from tutors. Students had high technology skills in communication and information retrieval, but low technology skills in creation. They felt least comfortable with the skills associated with creation technology. In addition, more complex technology skills were self-rated lower by student than simple technology skills.

Perceived Technology Barriers

Access to technology involves providing the proper amount and right types of technology in locations where tutors and students can use them appropriately (Fabry & Higgs, 1998). The tutors and students reported similar perceived technology barriers that suggest that the lack of knowledge about technology and the lack of knowledge about ways to integrate technology into the curriculum are the biggest barriers to use technology in online tutorial.

Multiple Linier Regressions (MLR)

Multiple Linear Regression (MLR) was used to develop a predictive model to measure the contribution of ETsR, ETsU, and TC to instructors' and students' intention to use emerging educational technology in distance learning, as measured by the weight of the combined contribution of the three independent variables to the prediction of BI. In order to perform the MLR analysis, an aggregated measure for each construct was created for ETsR, ETsU, TC, and BI. MLR was then performed using these measures. Four methods of selection—enter, backward, forward and stepwise—were used to analyze multiple linear regressions. The overall model for predicting tutor behavior intentions from the three predictors (ETsR, ETsU, and TC) was found to be significant with $F(3,125)=23.489$ ($p<0.05$). Results indicated that only one of the three individual predictors (TC) was significant ($p<0.05$), with a positive regression weight, indicating that BI increased as scores on TC increased. In addition, the positive regression weights for ETsR and ETsU indicated that higher scores on ETsR and higher scores on ETsU both indicated higher scores on BI; however, neither of these two independent variables were significant predictors of BI. The MLR coefficients are shown in Table 1. The proportion of the variance in BI that was explained by CSE, CA, and EUT in combination was adjusted $R^2=0.351$, or 35.1%. The overall model summary is shown in Table 2.

The weak influence of ETsR on BI for tutors could be due to the fact that tutors are urged to use the ETs in online tutorials; hence perceptions of usefulness are influenced by the institution. It appeared that greater positive reaction to emerging technologies among the students in online tutorials also fostered higher negative reaction in their tutors. Christensen (2002) found that instructor computer anxiety (CA) tended to increase along with the level of technological skill of students. Results also suggested that greater levels of perceived importance of computers in students fostered higher levels of CA in instructors. The finding implies that tutors need some training to reduce their negative reaction more rapidly than the advancing skill level of their students.

Results demonstrated that ETsU was not a significant predictor of behavior intention. The findings on ETsU did not represent the main strength and further did not validate the findings of other researchers—such as Compeau and Higgins (1995), Igbaria and Livari (1995), P. J.-H. Hu et al. (2003), Gong et al. (2005), and R. Thompson et al. (2006)—that computer self efficacy (CSE) is an important contributing factor in predicting behavior intention as it relates to technology usage. In addition, Holden and Rada (2011) found technology self-efficacy (TSE) was more beneficial to the TAM than their computer self-efficacy (CSE).

Table 1: MLR Coefficients

Tutor							
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	2.308	.752		3.067	.003		
ETsR	.061	.035	.222	1.760	.081	.327	3.053
ETsU	.048	.028	.188	1.701	.091	.423	2.362
TC	.062	.030	.255	2.109	.037	.355	2.817
Student							
Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	2.821	.228		12.356	.000		
ETsR	.062	.011	.242	5.815	.000	.315	3.179
ETsU	.007	.009	.031	.838	.402	.398	2.511
TC	.087	.010	.357	8.981	.000	.343	2.914

The overall model for predicting student behavior intention from the three predictors (ETsR, ETsU, and TC) was found to be significant with $F(3,1200)=214.618$ ($p < 0.05$). Four methods of selection—enter, backward, forward and stepwise—were used to analyze multiple linear regressions. Results indicated that only two of the three individual predictors (ETsR and TC) were significant ($p < 0.05$), with a positive regression weight, indicating that BI increased as scores on ETsR and TC increased. In addition, the positive regression weight for ETsU also indicated that higher scores on ETsU indicated higher scores on BI; however, this independent variable was not a significant predictor of BI. The MLR coefficients are shown in Table 2. The proportion of the variance in BI that was explained by emerging technologies reaction (ETsR), emerging technology understanding (ETsU) and technology competencies (TC) in combination was adjusted $R^2=0.348$, or 34.8%. The overall model summary is shown in Table 2.

Table 2: MLR Model Summary

Tutor				
Model ^b	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.605 ^a	.366	.351	1.31521
Student				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.591 ^a	.350	.348	1.24485
a. Predictors: (Constant), Competencies, Understanding, Reaction				
b. Dependent Variable: Intention				

Although in general students had a high perception of ETsU, this was not a useful predictor of technology acceptance. Indonesian students, who are from a collectivistic society, are dependent on their social group; their individual confidence level and their ETsU were not varied. Therefore, their ETsU did not influence BI. However, based on the interviews with students, the results indicated that students still used alternative ETs (e.g., Facebook, text messengers, Whatsapp) in order to keep up with the courses. Most of the students did not participate actively in online tutorials because of lack of tutor support; participation levels did not associate with ETsU. In addition, when taking online courses, students used search engines a lot in order to obtain more information. They also reported that the e-mails and discussion board in Facebook were very useful in terms of interacting with their peers.

The discovered value of adjusted R² of student data in this study indicated that the independent variables account for 35% of the accumulated variance. That is, aforementioned predictive constructs ETsR, ETsU, and TC have significant effects on dependent variable BI. In particular, as shown in table 1, weight-wise the impact of students' TC on dependent variable BI was greatest ($\beta = 0.357$, $p < .001$), followed by ETsR ($\beta = .242$, $p < .001$), ETsU ($\beta = 0.031$, $p > .01$).

Conclusion

Evidence from the MLR analysis demonstrated that technology competencies (TC) was the only significant predictor of behavior intentions (BI) among the three independent variables investigated for tutor data. For student data, emerging technologies (ETsR) and technology competencies (TC) were found to be significant predictors of BI.

This study contributes to the body of knowledge of emerging technologies acceptance in online tutorials by constructing a theoretical model introducing new constructs: emerging technologies reaction (ETsR), emerging technologies understanding (ETsU) and technology competencies (TC). The reason for introduction of different constructs in this theoretical model was the complexities of the organizational and social contexts within which instructors and students with varying individual characteristics make their decisions about using emerging technologies (ETs). Consequently, this study is expected to contribute in future research that will study acceptance of ETs.

There are two implications of this study for social change practice at the organizational level. First, the results provide key factors that affect instructors' and students' intentions to use ETs. They suggest that UT administrators should consider providing services for instructors and students who want to use ETs. Second, the findings will help the Department of Information and Technology at UT, especially learning management systems developers, to design and develop those systems that will be more likely accepted by instructors and students. Application of the concept of technology acceptance (TA) evaluation instruments should be a standard component of strategies prior to the introduction of new technologies to tutors and students.

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EFFECTIVENESS OF ONLINE TEACHING OF ENGLISH COMPREHENSION SKILLS AT GRADUATE LEVEL-A CASE STUDY OF VIRTUAL UNIVERSITY OF PAKISTAN

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Abstract

The present study is an attempt to fulfil three main objectives: (i) compare the effectiveness of online vs. conventional mode of teaching of English Comprehension. (ii) determine the effect of online teaching of English Comprehension in Pakistan (iii) observe the perception of students' learning in virtual and conventional mode. It has been observed that online mentoring, though recent phenomenon, has planted its roots firmly in the education sector; however, the traditional mode of learning has managed to retain its position despite the convenience of the former mode. Online courses have become a vital part of a majority of high-ranking universities and students' enrolment has significantly improved. In this context it is hypothesized that online teaching of English Comprehension at Graduate level is more effective as compared to conventional mode. The population is Graduate students of Virtual and Conventional mode. Sample size comprises 100 subjects from both the modes. Data is collected from a random sample of students covering gender, age, residence and academic background. Experimental research design is used to evaluate the English Comprehension skills of the students along with Questionnaire to further assess students' performance and perceptions. Virtual mode students are given treatment in the form of Skype sessions to enhance their Speaking skills. Afterwards, pretest and posttest results from Virtual and Conventional modes are compared. It is observed that Skype sessions provided a concrete platform for real time interaction to the virtual class students. The Results show that students from Conventional mode have better grammar, writing skills and professional efficacy; whereas students from Virtual mode have better listening, speaking and reading skills. This indicates that both modes of instruction hold an advantage over the other in certain aspects.

Introduction

Online education has matured into an industry and is now responsible for educating individuals all over the world. Online courses have become a vital part of a majority of high-ranking universities and the student enrolment has significantly improved Jordan (2014). Students at graduate level are often lagging in English comprehension skills and it is important to identify the causes of this problem. Without having proper knowledge about the English language, it is impossible to develop comprehension skills and it is therefore vital that the learning method, be it online or traditional mode is effective and yields results. Moreover, a lot of people are able to get education through the online mode so it is essential to have course work and teaching exercises according to the learning abilities of the students.

The purpose of the following research is to emphasize the effectiveness of English Comprehension in Virtual and Conventional modes at Graduate level. Consequently, the research derives its fundamental aspects from the Connectivist theory. The correlation of distance learning with the success of distant learners from a variety of areas can be emphasized through the Connectivist theory. Under the Virtual mode of learning, the students typically do not have the advantage of direct, conventional communication with the instructor or with the place of instruction. Nevertheless, they still have an opportunity to benefit from the instructions and the teachings imparted to them by the instructors through a wide availability of online resources, which facilitate in providing easy accessibility to the course material. There are numerous resources that connect learners with the learning place; there are considered nodes in Connectivism and such nodes are linked to the main network in order to share and dispense knowledge. Under the Connectivist model, knowledge is imparted across a shared information network and can be reserved and shared through a variety of digital formats. By a range of digital formats, Siemens (2005) means to imply that the students can get access to different forms

of knowledge from a single information network, through multiple online resources that they can access and that link them to the central network. Consequently, the current analysis also serves to highlight the importance of the teaching of English Comprehension in particular and the significance of online methods of instruction and learning in general.

Objective of the Study

- Highlight the importance of teaching English Comprehension through online and conventional teaching methods.
- Compare the effectiveness of online vs. conventional mode of teaching with regards to English Comprehension.
- Determine the effect of online teaching methods with particular regard to English Comprehension in Pakistan.
- Promote e-learning by educating people of its importance and to gain attention of institutes or mentors capable to encourage this endeavor.

Research Questions

Questions for research include the following:

- How many students are successful in English Comprehension at graduating level pertaining to their mode of education?
- Is there an existing correlation between online vs. conventional education at graduate level?
- Is English Comprehension as successful a subject online as it is in the conventional mode of education during graduate studies?

Significance of the Study

This study is being done to determine the effect of traditional vs. online education on the English comprehension skills of the students at the graduate level. Online learning is a relatively new concept in Pakistan and has to be explored effectively in order to understand its impact. This study would highlight the differences between the two modes of education and how students benefit from them when learning English Comprehension. This study will also bring forward the limitations students face while learning online so that teachers and institutions following this mode of education could understand their limitations and remedy that. The significance of the study further treads upon the developing data that will lead towards future research on the effectiveness of online and traditional mode of learning with special emphasis on English Comprehension skills.

Literature Review

The origin of distance learning can be traced back to 19th Century in continental Europe and England where postal services were incorporated to provide education by the means of communication in colleges (Phipps and Merisotis, 1999;Ponzurick, France, and Logar, 2000;Wernet, Olliges, and Delicath, 2000). The expression “distance education” is usually described as a process of facilitating the learner with education where the instructor and the student both are geographically detached with one another (Gallagher and McCormick, 1999).

Constant evolution of distance learning (DL) is due to the fact that the world has become a global village with the invention of World Wide Web which consequently provided a medium for distant learning. This expansion of distant learning increased in the 1990’s with the help of computer oriented programs such as, “two-way interactive video; two-way audio and Web-based asynchronous

communication; and online or offline Internet Web-based instruction” (Phipps and Merisotis, 1999; Ponzurick et al., 2000; Wernet et al., 2000). Developments in progressive technology have empowered the Web’s graphic, collaborative nature to renovate the orthodox university classroom-tutor method into a variation of diverse and advanced practices of instructional dissemination and to disperse locations (Ponzurick et al., 2000).

Jacqueline and Smita (2001) explain that convenience is a major aspect for students who opt for online education. Travelling can be an issue and they might have problem managing their time with a steady job. In this way colleges are helping greatly by providing online courses which are credible for employment.

The Khan Academy approach, expanding videos with technology and paralleling online mastery acquisition, is being used in K–12 settings to counterpart traditional classroom teaching. At the moment Khan’s tutorials are mainly based on pre-college modules, his long term plan is to facilitate, "tens of thousands of videos in pretty much every subject" and to create "the world's first free, world-class virtual school where anyone can learn anything" (A Free World Class Education for Anyone Anywhere). The accomplishment of his low-tech, communicative tutorials, Khan's face is never shown on the screen and the learners only view his austere step-by-step scribbles and diagrams on an electronic blackboard. Khan’s techniques are suggestive of a revolutionary form of education and also deemphasize the importance of a face-to-face classroom setting (Kaplan, 2010).

According to Dr. Naveed A. Malik et al. (2005) distance education (DE) is an integral part of developed countries and there are numerous reasons behind this fact as most of the learners/students wish to acquire education not only in privacy but also as a matter of convenience. Moreover, online education facilitates such learners who are running a home or employed and want to utilize the academic facility according to their schedule and availability. The online teaching methodology requires the students to be more focused towards learning, pro-active and responsible for their own learning outcome as the result depends solely on the effort exerted by them. Chen et al. (2014)

A considerable body of study and research on distance learning (DL), (between 1952 -1992) projected that the outcomes of distance learning were not as dissimilar as those acquired in traditional learning (DeSantis, 2002). In their review of distance learning programs, Phipps and Merisotis” (1999) reported:

With few exceptions, the bulk of these writings suggest that the learning outcomes of students using technology at a distance are similar to the learning outcomes of students who participate in conventional classroom instruction. The attitudes and satisfaction of students using distance education also are characterized as generally positive. Most of these studies conclude that, regardless of the technology used, distance education courses compare favourably with classroom-based instruction and enjoy high student satisfaction. (p 28)

Siemens (2014) also proposes that in an online course, interaction will possibly not go beyond communication for most of the time. He notes that while it is not realistic to anticipate community in many online courses and it should be possible in graduate level programs with high learner-learner contact. Courses have little static content, other than an inclusive syllabus and course outline, and are heavily driven by the interaction among learners and between instructor and learners.

Methodology

Experimental research aims to test a hypothesis by directly attempting to influence a variable based on the relationship of cause and effect. By manipulating a variable that is independent, a research is conducted and its results are compared to a dependent variable with hindsight that conclusions can be drawn in favor of the hypothesis.

Paired Sample T-Test has been used to analyze the Pre and Post test scores of English Comprehension Graduate students in Virtual and Conventional modes. A paired sample t-test is used to determine whether there is a significant difference between the average values of the same measurement made under two different conditions. Both measurements are made on each unit in a sample, and the test is based on the paired differences between these two values. The usual null hypothesis is that the difference in the mean values is zero. A questionnaire has also been used to record the perceptions of students of both the modes.

Research Design and Sample

True experimental design has been utilized to test the hypothesis. Random selection of subjects signifies true experimental design. The pretest-posttest control group design method allows random selection of subjects divided into two groups that are tested before treatment and one of the groups receives treatment after which it is tested again.

The entire data that was originally in qualitative form has been changed into quantitative or numerical form to allow for statistical analysis. Furthermore, various tests are being applied in order to analyse the data. The sample is randomly selected, consisting of graduate students of English Comprehension from both Virtual and Conventional modes. The sample is made up of 100 students; 50 students from Conventional mode and 50 students from Virtual mode. Student selection was varied on the basis of age, gender, academic and residential backgrounds for a quantitative and qualitative analysis of test results.

Pre-tests and post-tests were conducted to evaluate the learning and skills of students. Moreover, questionnaires were used to further assess students' performance and responses. The sample subjects were asked to analyse both teaching modes and their own individual skills using a Likert scale, with 1 being "Strongly disagree" and 5 being "Strongly agree."

Since the experimental (Virtual) group operates through remote instruction and distance learning, it lacks an element of direct communication and face-to-face interaction. Accordingly, treatment was given to the experimental group (virtual mode students) in the form of weekly live sessions involving Skype sessions. Skype is not only an easy platform to use, but it also allows participants to share screens, thereby allowing for real-time interactive sessions. It was anticipated that Skype would prove to be a good platform to foster a personal association between the instructor and students, and it allows the instructor to better illustrate complex aspects. The group was tested both before and after the treatment to better analyse the changes and improvements, if any, generated by the introduction of Skype sessions. The pre test and post test results of both the modes (virtual and conventional) were also compared to gauge their performance.

Data Analysis

Table 1 represents the mean value of 100 research participants including virtual and conventional mode.

Table 1: Pre & Post Test Mean Values by Mode, Age, Gender & Residence

		Pre_1	Post_1
		Mean	Mean
A. Background	Matriculation	17	39
	O Level	19	31
Mode	Virtual Mode	17	38
	Conventional Mode	18	38
Age	16-20	20	41
	21-26	16	36
	27-32	15	35
	33-37	27	45
Gender	Male	16	36
	Female	20	40
Residence	Urban	18	38
	Rural	18	38
	Overseas	13	33

Interpretation

After conducting Reliability test, Descriptive Analysis of data is conducted that is based on two variables Pre test and Post test. The mean value of Pre and post test is reflected in this table at various levels including Virtual and conventional mode, Academic background, Age, Gender and Residential background. In descriptive analysis, marked difference can be seen between pre test and post test mean value.

T-Test

Mode = Virtual Mode

$H_0 : \mu_d = 0$ (There is no difference between two groups)

$H_1 : \mu_d \neq 0$ (There is difference between two groups)

Paired Samples Statisticsa

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre_1	16.52	50	7.034	.995
	Post_1	38.16	50	10.743	1.519

a. Mode = Virtual Mode

The mean value of pretest scores in Virtual Mode is calculated at 16.52 and the average value for the posttest scores arrives at 38.16.

Paired Samples Correlations^a

	N	Correlation	Sig.
Pair 1 Pre_1 & Post_1	50	.585	.000

a. Mode = Virtual Mode

Paired Sample Correlation is applied on Pre and Posttest variable for Virtual Mode. The Correlation between the pre and posttest variables for the Virtual mode is found to be 0.585. The P value for the correlation analysis is found to be 0.000, which is less than 0.05. This indicates that the two variables correlate to each other.

Paired Samples Test^a

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre_1 - Post_1	-21.640	8.745	1.237	-24.125	-19.155	-17.497	49	.000

a. Mode = Virtual Mode

Paired Sample T Test is applied to find the mean difference between the pre and posttest results for the Virtual Mode. The mean difference is found to be -21.64 with standard deviation of 8.74. The t-value is calculated as -17.49. The P value is 0.000; which is less than so we reject the null hypothesis and conclude that mean difference is not equal to zero; in other words, average mean differences are significant.

Mode = Conventional Mode

Paired Samples Statistics^a

	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 Pre_1	18.28	50	6.135	.868
Post_1	37.58	50	9.636	1.363

a. Mode = Conventional Mode

The mean value of pre test scores in Conventional Mode is calculated as 18.28 and the average value for the posttest scores arrives at 37.58.

Paired Samples Correlations^a

		N	Correlation	Sig.
Pair 1	Pre_1 & Post_1	50	.454	.001

a. Mode = Conventional Mode

Paired Sample Correlation is applied on Pre and Posttest variable for Conventional Mode. The Correlation between the pre and posttest variables for the Conventional mode is found to be 0.454. The P value for the correlation analysis is found to be 0.000, which is less than 0.05. It shows that the two variables correlate to each other.

Paired Samples Test^a

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre_1 - Post_1	-19.300	8.767	1.240	-21.792	-16.808	-15.566	49	.000

a. Mode = Conventional Mode

Paired Sample Correlation is applied on Pre and Posttest variable for Conventional Mode. The Correlation between the pre and posttest variables for the Conventional mode is found to be 0.454. The P value for the correlation analysis is found to be 0.000, which is less than 0.05. It shows that the two variables correlate to each other.

Descriptive Statistics of Questionnaire

Mode		N	Minimum	Maximum	Mean	Std. Deviation
Virtual Mode	EFFECTIVENESS	50	1.00	5.00	3.1900	.87999
	Language skills	50	1.00	5.00	3.3600	1.27391
	Speaking Skills	50	1.80	5.00	3.4800	.81916
	Writing Skills	50	1.20	5.00	3.3680	.92614
	Listening Skills	50	1.00	5.00	3.8200	1.20695
	Reading Skills	50	1.00	5.00	3.7400	1.10306
	Prof. Efficiency	50	1.00	5.00	3.2680	1.00091
	Grammar	50	1.00	5.00	3.2600	1.29063
	Valid N (listwise)	50				

Conventional Mode	EFFECTIVENESS	50	2.00	5.00	3.4800	.67166
	Language skills	50	1.00	5.00	3.6800	1.05830
	Speaking Skills	50	1.40	4.60	3.4360	.79662
	Writing Skills	50	1.60	5.00	3.6720	.74588
	Listening Skills	50	1.00	5.00	3.6600	1.09935
	Reading Skills	50	1.00	5.00	3.4200	1.03194
	Prof. Efficiency	50	1.60	4.80	3.4960	.72982
	Grammar	50	1.00	5.00	3.5400	1.21571
	Valid N (listwise)	50				

While looking at the above table of questionnaire results, we can see that for the Virtual Mode, students have more effective Speaking Skills, Listening Skills, and Reading Skills as compared to Conventional Mode results. Whereas for the Conventional Mode, Students have more effective Language Skills, Effectiveness, Writing Skills, Proficiency and Grammar as compared to Virtual Mode students.

Discussion

This part will summarize the various outcomes generated by the study under consideration. The sample population comprised Graduate students of English Comprehension from both Conventional and Virtual mode. A sample of 100 students was selected to conduct pre test and post test. A questionnaire was prepared in the English language. The descriptions of all the variables were found. T Test was conducted to gauge the effectiveness of English Comprehension, and the extent of variation exposed by the extracted factors was observed as well.

The hypotheses were tested on statistical basis and the results ascertained the facts about various aspects of English Comprehension, it would provide reliable information that can be interpreted to reach at conclusions. Moreover, it is important to establish that the perspectives of either group of samples is not taken as standard. However, it does reflect views regarding the effectiveness of English Comprehension at Graduate level. It is also analyzed with reference to a theoretical framework for this study. It can be helpful in deriving the conclusions about the effectiveness of the teaching of English Comprehension in Pakistan. To find out the quantifiable efficacy of E-learning in Conventional and Virtual modes, the mean values of individual questionnaire response was computed into tabular form for better comparable analysis.

The study revealed that the majority of participants from Virtual Mode agree that their English Comprehension skills have improved after the introduction of E-learning. Overall, students of Conventional mode showed an improvement in the areas of language skills, oral presentation skills, persuasive written messages, formal writing, sentence structure, effective writing skills, CV writing skills, enhanced learning efficiency, observation of new scenarios, communication skills and grammar skills. Whereas, the students of Virtual mode of education demonstrated a better grasp of verbal ability, reading skills and listening and cognitive ability.

Compared to the conventional/traditional mode of education, virtual mode provides learners with more interactive ways to learn. It allows students to control the pace of the coursework as suited to their own requirements, by focusing on specific areas they find more challenging. This allows the students to be more satisfied, which, in turn, further improves their learning curve. In this regard, motivation becomes a key factor in promoting and ultimately improving students' learning ability. Compared to the conventional mode, virtual mode allows easier access to courses as well as

instructors. This is especially true for higher education levels. This regular and ongoing access to courses and instructors provides a further sense of assistance and support, which contributes to richer learning ability.

Conclusion

It is derived from the results that virtual mode has proved as effective as conventional classroom instruction when supplemented with Skype sessions. After conducting T Test on pre test and post test scores of virtual and conventional mode students, it is found that average mean differences of both the modes are significant.

Online educational mode is effective as it has been able to overcome various limitations specific students have been facing, both at an individual and a collective level. Virtual teaching provides a versatile and adaptable learning environment for both the faculty and the learners. Regardless, there are still multiple issues that educational institutions need to address before the online courses can prove to be successful. Clear and defined objectives need to be set in order to ensure success of online instruction and learning. In the case study under consideration, the students of virtual mode appeared to find the study of English Comprehension a positive learning experience when aided by weekly Skype sessions.

It is concluded that the teaching of English Comprehension is effective in inculcating oral and written skills in students. Furthermore, it may be argued that, while there are obvious interactive benefits of conventional education, the effectiveness of virtual mode with the help of Skype sessions cannot be denied. The current study may also assist the curriculum designers to incorporate technology in the main curriculum, which may assist the instructors to incorporate Skype or other softwares while teaching English Comprehension.

The outcome generated through an analysis of data indicates that it relates to the principles of Connectivist theory. Siemens (2005) says that incorporating new technology into teaching proves very useful and enables the student to acquire reliable and accurate knowledge. In the same way, this case study concludes that a technology-based education is useful in imparting critical career skills and can be applied to any discipline, including English Comprehension.

The results indicate that both virtual and conventional modes show positive response in different aspects. Virtual mode students who receive remote instruction via online classrooms show better development of English comprehension (listening, speaking and reading skills). Conventional mode students who attend regular classroom lectures show an overall improved skill portfolio.

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INFORMATIONAL TECHNOLOGY AS THE BACKBONE OF EFFECTIVENESS OF THE REGIONAL OFFICES ORGANIZATIONAL STRUCTURE

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Abstract

Indonesia Consist of about 17,000 groups with a total population of about 230 million. Also Indonesia is home to more than 200 ethnic. Open University / UT (Indonesia Open University) is one of universities that is mandated to develop human resources in Indonesia. UT student population is now about 400 thousand people spread throughout Indonesia and abroad. To provide services to students, UT set up regional offices (ROs) in 39 cities. Each RO has different workloads and complexity. However, the design of organizational structure of ROs is the same in all ROs, i.e. head of RO, one administrative manager and two coordinators. Problems encountered in relation with the uniformity of the organizational structure are (a) a standard operational procedure can not be used / implemented a fully, (b) high informal communication, and the division of labor is less clear. This study intends to evaluate the performance of the organizational structure of the ROs. The unit of observation in this study is the RO's organizational structure, employee of ROs, study groups, and students. Sub focus this study is the differentiation of ROs works, span of control, coordination, and communication in ROs. This study uses a mixed method with concurrent triangulation strategy. Data were collected through interviews, observation, focus group discussions, and questionnaires. The findings reveals that (a) there are some basic tasks that have not been written, (b) span of control is effective, and (c) coordination and communication is effective. Data analysis showed that the regional office has effective organizational structure, because they, (a) use of IT for collecting, processing, sharing and storing of the data and information, (b) developed high informal communication, and (c) the authority of the RO's head office add its own mechanism of action. The implications of this study is that if an organization has a high level of complexity, the organization needs to be designed with autonomy to design of the division of services in the area, tolerate the use of informal communication lines, and utilize IT to facilitate network management services.

Keywords: *Regional office, organizational structure, coordination, communication, informational technology*

Introduction

1. Background

Indonesia consist of about 17,000 groups with a total population of about 230 million. Also Indonesia is home to more than 200 ethnic. Open University / UT (Indonesia Open University) is one of universities that is mandated to develop human resources in Indonesia. Open University (UT) was established in 1984. UT is the only university in Indonesia, which uses the full distance mode. At 2015 the number of active students is 405.997 students. UT area of operation covers the entire territory of Indonesia and abroad. To serve 405.997 students, UT set up regional offices spread across 38 cities at all province and one special regional office (RO) to serve Indonesian students abroad. ROs provide academic and administrative service to students because the UT Head Quarter is not designed to serve students. The condition of each ROs is not the same. Some ROs, the area of operations all in mainland. Other ROs the area of operations in the form of islands, and some ROs its territory is a combination between the mainland with the islands. The diversity makes it difficult to develop a coordination mechanism. The diversity of the region was coupled with the diversity of patterns of student services, so that the complexity of the environment and the problems faced by ROs is also different.

Based on the observations of secondary data and interviews with sources obtained the following results. According to the Statute of the UT No. 23 Year 2007 ROs has the tasks of learning support services, carry out academic administrative services, distribute teaching materials to students, conduct exams, practice and laboratory work, send the test scores to students, make delivery of diplomas and student activities. Tasks ROs is similar to the task of regional offices in several universities, such as the Open University of England, Indira Gandhi National University (IGNOU), and the Korea National of Open University (KNOU) which generally perform the duties of services for students such as academic information, counseling, certificate issuance, publication, publishing student cards, tutorials, and exams.

Operationally, the organizational structure in this study was obtained through a questionnaire scores on employee perceptions of the organizational structure of the UT as measured by indicators: (1) the clarity of job descriptions and work according to the functions and divisions; (2) coordinating the implementation of tasks and work formally and informally; (3) communication upwards, downwards, sideways with or without the media; (4) relationships with or without the media reporting; (5) implementation mechanisms and procedures; (6) and use the authority designated by the policy. To carry out the task formed ROs organizational structure consisting of a Chief who is directly responsible to the Rector, a subsection chief, and two coordinators, the Coordinator of Registration and Testing, and Learning Assistance Coordinator and Instructional Materials Services. The diversity of conditions faced by ROs will produce different workloads among RO.

The workload of each RO different depending on the area, the complexity of the work area, and the number of students. The problem faced by ROs which has the same characteristics, are generally the same. From interviews with informants from Bandung ROs obtained information that the mechanisms and procedures are set forth in the statute are less suitable for application in the field. To overcome this ROs equip it with the systems and procedures in accordance with the needs ROs. Systems and procedures are equipped with IT to perform coordination within and between ROs, ROs with the UT Center and between ROs and students, and other stakeholders.

Systems and procedures set out in the Statute requires adjustments to suit the conditions of each ROs. Until now there has been no comprehensive evaluation of the organizational structure of ROs ability to coordinate the work of the provision of services to students and increase student participation rates. Researcher assumed that span of control also influenced the effectiveness of management of ROs.

Based on the description in advance, then some problems that can be identified by are :

- (a) Guidelines of coordination of the work cannot be applied at all ROs.
- (b) ROs need to adjust the guide lines.
Some student registration delays.
- (c) There is a high informal communication as a formal communication is not effectively used for solving the problem in ROs.
- (d) The effectiveness of the organizational structure of ROs has not been evaluate in a comprehensive manner, including models of ROs, and coordination between study groups.

In a study at UT, Agus Joko Purwanto (2013) found that the information system directly affect the organizational structure, organizational culture, human resources development, and learning organization.

The aim of the evaluation is to clarify of the main tasks and functions, the effectiveness of the control range, the effectiveness of coordination, and effectiveness of communication mechanisms among officials, among officials and employees, and servants and employees, ROs and UT Head Quarter, and among ROs and outside parties, both formal and informal communication. In addition,

this study is relevant to do now because UT is currently revising the working procedures of the organization and will be followed by a revision of the Statute of the UT. Thus the results of this study will be used to redefine the duties and functions of ROS. This research was conducted by the author along Irsanti Widuri Asih, in 2014. The author would like to thank you for the good cooperation in the conduct of research.

This study is an evaluative study using a combination of research methods blend (mix method). The research strategy that will be used is a combination of concurrent triangulation strategy. The data collected in this study is data about the performance of the organizational structure of ROs. The component of organizational structure of the component evaluated are differentiation tasks, span of control, coordination, and communication mechanisms.

The research location is Bandung RO which is considered to represent RO with broad control range and large number of students, and Surakarta RO considered to represent medium / small ROs with little student number. Data was collected by interview, observation, focus group discussions and questionnaires. The data source is the leadership research of ROs and employees, as well as the study group management. While the questionnaire given to the students. The data processing method of triangulation.

2. Conceptual Framework

Initial management figures who initially concerned with the organizational structure is Max Weber (1946). The terms used by Weber is the bureaucracy. According to Weber, there are at least three pillars of bureaucracy that is regular activity, authority to give orders, and methodical provision. Weber clearly distinguish between formal structures, formal communication, informal communication, and impersonality factor in the job. In line with Weber, Down (1967) describes the characteristics of organizations that include the formal hierarchical structure of authority, formal hierarchical communication networks, extensive systems of formal rules, informal structure of authority, informal and personal communication networks, and formal impersonality of operations. Meanwhile, Mintzberg (1983) suggested an important component of the organizational structure is the division of labor and coordination of work.

The organization is always changing, as well as its organizational structure. According to McShane and Von Glinow (2008) organizational structure consists of components span of control, centralization, formalization, and division of labour. Shane and Glinow line with Weber and Down. To integrate the work required coordination, communication, formal authority. The organizational structure also reflects the organizational culture and power relations.

Along with Weber, Downs, and Shane and Glinow, Mullins (2005) focus on management functions in organizational structure. Within the organizational structure, management functions take place. Mullins making explicit that in each box structure (the term Mintzberg, McShane and Von Glinow is the division of labor) implies limits on the duties and responsibilities appropriate authority. Robbins and Judge agrees with Weber, Downs, and Shane and Glinow, and Mullins. Robbins and Judge (2011) explains that in the organizational structure contain six things such as specialization of work, division of labor, chain of command, span of control, centralization and decentralization, and formalization.

In contrast to Weber, Downs, and Shane and Glinow, and Mullins and Robbins and Judge, Daft (1998) states that the organizational structure has a broader scope such as formal reporting relationships, grouping the individual, and ensure the effectiveness of the system design. Management's ability to combine the elements of the organizational structure will produce an effective organizational structure. Experts agree that the key element of organizational structure are the division of labor, coordination, communication, hierarchies, and integration. Meanwhile, Downs adds that the organizational structure there are also informal power structures and informal

communication. Informal structure is generally used to complement the performance limitations of formal organizational structure.

The researchers concluded that the main components of organizational structure is differentiation, integration, span of control, and communications. Based on the description above, researcher synthesize various concepts about the organizational structure. According to researcher, organizational structure is a system of task and reporting relationships that coordinate and motivate members of the organization in order for them to work together to achieve organizational goals.

Changes in the environment triggers changes in the organizational structure, one of the important environmental change is a change in information systems. Adoption of information systems by the organization is able to change the way of coordination, communication, and data search information, how data and information processing, data storage means, how to transfer data and information, including how the presentation of data and information within the organization. Daft (1998) stated that advances information technology can reduce the need for middle managers and administrative support staff. The organization will be leaner organizations with fewer hierarchical levels. Information will flow through formal communication channels as defined by the organizational structure as well as through informal networks that goes beyond the mechanisms that have been set. Management often open informal communication network to break through the limitations of formal hierarchical communication and procedural. Without reliable information system (IS) the information and data will be flowing slowly, distorted data did not even get to the part of organizations or other parties who should receive it.

IS very substantial influence on the structure of the organization, Daft explained that the IS was able removes the barriers of time and distance. The organizational structure is influenced significantly by IS. IS developments have prompted changes in the way we communicate and collaborate, and the integration of data into a single system that is highly effective. Culture and technology have revolutionized the way people communicate and work. Jacob Morgan (2012) illustrates the IS role in revolutionizing the organization in the way we communicate and share information with another, with customers, and with employees has changed dramatically. According to Schermerhorn (2011), the use of IS requires organizational changes with an adhocracy to combine with bureaucratic element based on advanced information systems. Jones (2010), IS has also led to decentralization of authority and increasing the use of work teams. Jones, et al. (1998) pointed out that the use of email communication easier for managers at all levels, communication becomes unstructured due to take place outside the formal structure, the e-mail can be used to communicate across functions and more horizontal.

Mejia et al. (2005) states that the modern computer-based information systems have become central components of many organization's structures. In line with the statement of Mejia, et al., Jones states that the rapid rise of computer-based information systems has been associated with a "delaying" (flattening) of the organizational hierarchy and a move toward greater decentralization and horizontal information flows within organizations.

From the statements of the experts seems clear that the IS adversely affect the organizational structure.

3. Findings

Surakarta ROs working area of operation is in the 9 municipality. The number of employees who work in Surakarta RO total of 37 people consisting of 17 faculty, 19 staff, and 2 staff by contract. While working area Bandung RO consists of 18 counties and cities in most areas of West Java Province. The number of employees who work in Bandung RO many as 49 people composed of 21 faculties, 31 administrative staffs.

RO organization structure according statute:

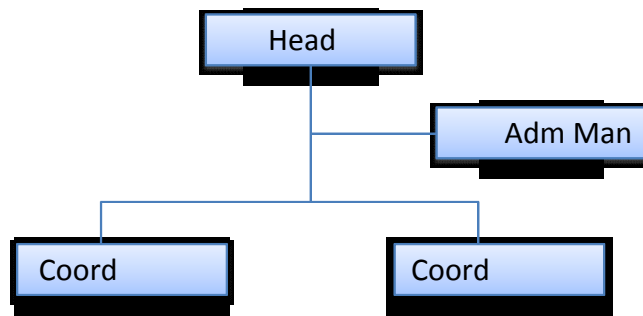


Chart 1: The Original Organizational Structure according to UT Statute

Based on interviews and observations, the organizational structure of Surakarta and Bandung RO need adjust their original structures to suite the need of RO. The organizational structure after adjusted is as follows.

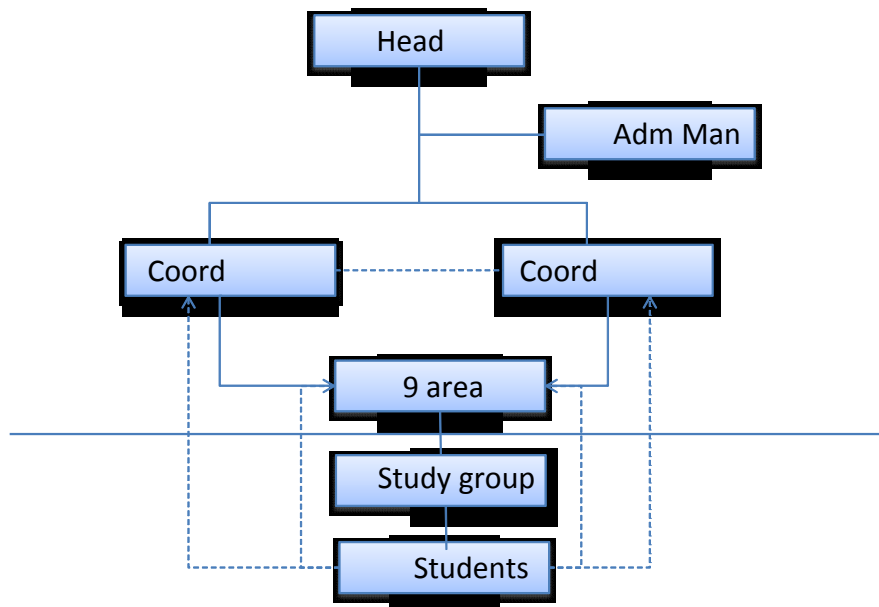


Chart 2: Surakarta Organization Structure

On Chart 2 above shows that Surakarta RO consist of a chairman, an administrative manager, two coordinators, and 9 people in charge of area (as area managers). While Bandung RO which has more number of students, carrying out more studies program, and has a working area wider than Surakarta RO has an more complex organizational structure particularly on the amount of people who in charge of area. Here is the organizational structure Bandung RO.

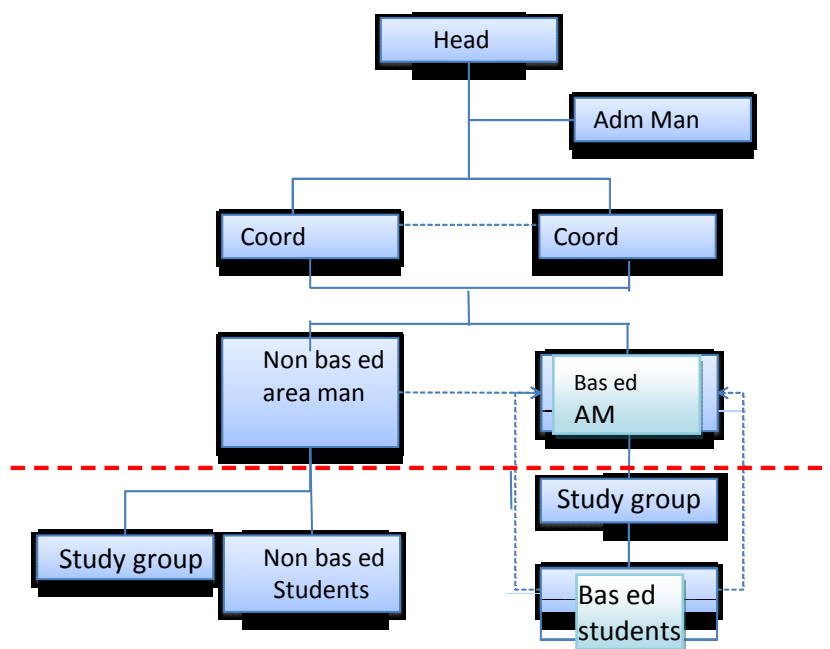


Chart 3: RO Organizational Structure Chart

The differences between Surakarta RO and Bandung RO is Bandung RO has non basic education and basic area in charge while Surakarta RO not. In addition, there is a group learning for students of non basic education in Bandung RO.

Formulation of a Task

Based on interviews, the formulation of duty in the Statute and guidelines is quite clear. It showed that in Surakarta RO and Bandung RO task clearly defined, the working relationship with other employees is clear, the task is given in writing, the limits of authority clear, the work does not overlap, the task appropriate employee competence and no explanation from the head of the task given. In accordance with the opinion of Hodge and Anthony (1988), which states that one of the indicators of effective organizational structures is the line of authority and accountability can be clearly identified, and the organization differentiates its activities are performed efficiently and effectively.

Span of Control

According to Mike Myatt span of control is "the number of subordinates directly reporting to a leader / manager. In accordance with the understanding Myatt and Statutes UT, head Surakarta RO directly control one person i.e. administration manager, two coordinator, nine person in charge of area, and a number of lecturers. Control is done through meetings, regular monitoring and reporting of each finished doing work. According to the interview, the span of control in Surakarta RO quite effective. Factors that reduce the effectiveness of the control range are the causes of low employee skills and commitment of employees at work.

While the span of control of Head of Bandung RO is one administrative manager , two coordinators and 19 in charge of the area of non basic education and 16 in charge of the area of basic education. To improve the effectiveness of operational control RO services, Head of Bandung RO with its authority, forming responsible distinguished in charge of each area and person in charge based on program. There are 35 types of tasks a responsible level assigned to provide direct student services.

Coordination

The concept of integration / coordination refer to how align jobs that arise as a consequence of the division of labor. Integration is used to coordinate tasks, jobs, and people in the organization. Based on field interviews, coordination activity at RO performed in almost every work. ROs work can be divided into two kind of activity: (1) work that already has a fixed schedule such as registration, tutorials, and exams. (2) The work is incidental that the work is incidental assignment of the UT headquarter such as the organization of regional coordination meeting. At registration, tests, and tutorials activities for the Basic Education Program, coordination performed among the head of RO, coordinator, administrative manager, and the head of study groups. As for the non basic education program does not involve study group. From interviews in two ROs, the wider region of RO, a more growing number of students and programs offered, a job in ROs becoming increasingly complex. It appears from the difference between the amount area person incharge of Surakarta (9 persons) and Bandung (35 persons).

In general, respondents' answers indicate that the majority of employees in Surakarta and Bandung ROs feel that they are always coordinating the work. Coordination is often did personally and take place by in the execution of the work and the media (email, phone, social media) is widely used in coordination. Coordination mechanisms are widely used by ROs are meeting, forming *laisson* and the team. This is accordance with the opinion of Mejia, et.al. (2005) which states that the coordination mechanisms that are commonly used are meetings, organization wide reward systems, teams and task forces, liaisons, integrating managers, and the organization's culture. Integration mechanism used to harmonize the measures of the various units, activities, people, and other resources.

Based on interviews and quantitative data processing shows that coordination is done by Surakarta and Bandung ROs already effective but still needs to be improved effectiveness. The effectiveness of coordination will increase the effectiveness of the organizational structure.

Communication

Communication that reffered here is organizational communication both formal and informal. Based on interview, communication in ROs very intense and effective. Communication in ROs done face to face or using media such as email, SMS, phone, and social media. Social media has changed the form of communication that communication in the form of a flat or even network rather than hierarchies

Besides formal communication, ROs employee also develop informal communication. Many rely on informal communication media phone, sms, email, and social media. The informant claimed that their communication with other ROs employees and leaders have not an obstacle. If they cannot communicate at the formal time they choose to use the time outside working hours to communicate. Effective communication supporting the emergence of an effective organizational structure. This is in accordance with the opinion of Hodge and Anthony (1988), that the communication process in the organization is efficiently constructed. Recognizes the necessity of an informal structure.

UT policy provides flexibility to the Head of ROs to modify their own internal management to contribute increasing ROs organizational effectiveness. ROs allowed to develop their own internal systems in accordance with the authority of ROs. Findings at Surakarta and Bandung ROs proved that there is a difference between the internal system of Surakarta and Bandung ROs. The adjustments made to answer the demands of fast, accurate, and high quality of service delivery. This decentralization has increased the effectiveness of the organizational structure of ROs. Theoretically, UT's policies gave decentralization to the head of ROs to develop their own internal system based on the existing guidelines is accordance to the opinion of Hodge and Anthony (1988), namely the structure allows for an appropriate amount of decentralization and complexity so that the organization can respond to the contingencies of the environment.

When compared with other open university in the world, UT's ROs job of has no differences with other ROs that were developed in several countries such as the Open University of England, Indira Gandhi National University (IGNOU), and the Korea National of Open University (KNOU). Duties and functions of UT's ROs equal to the duties and functions of their regional office namely as a place for students to obtain academic administrative services and learning services.

To test whether the informants and respondents' opinion about the effectiveness of the structure of ROs also perceived by students and study group administrator, researchers also interviewed students and study group administrators at Surakarta and Bandung ROs. Interviews showed that students and study groups have no barriers in accessing services both academic and non academic affairs at Surakarta and Bandung ROs.

The above findings indicate that the organizational structure in the Statute of UT need modification to suit the environmental conditions. ROs given authority to adjust its internal structures to the changing external factors. Coordination, span of control, and communication can be done well. In performing its duties, ROs intensively developed team work.. ROs also combine a bureaucratic structure with ad hoc teams. This is possible because of the use of information technology and greater delegation of authority to ROs to adjust its organizational structure. In ROs, information technology used to search for information, to process information, to communicate information, to store information, and to present information. The media are often used to convey information is the web, email, phone, short message system, and social media. System information is also used as a means of informal communication. The effectiveness of the ROs organizational structure is supported by both formal and informal communication that is supported by the intensive use of information systems. Such opinions such as Schermerhorn (2011) and Jones (2010) that the presence of IS allows organizations to combine an adhocracy with bureaucratic element based on advanced information systems, and wider delegation of authority to the regional head offices.

Conclusions and Implications

Job description in the Statute and Guidelines is clear enough. Policies for employee performance goals to make their individual tasks become more clearly defined and do not overlap. The formulation of the tasks and jobs in Surakarta and Bandung ROs formulated clearly, the working relationship with other employees is clear, the task is given in writing, clearly limits the authority of, the work does not overlap, tasks according to the competence of employees, and no explanation from the head of the task given.

Span of control in Surakarta and Bandung ROs quite effective, although there are employees who do not report the results of its work. Wide or narrow span of control depending on the area and complexity of the work of ROs. Control of the work is done with meetings and supervision, either directly or by using the media.

Coordination in Surakarta and Bandung ROs were done to coordinate routine and incidental work. Coordination mechanisms used was meetings, developing work teams or employees, assign staff to responsible for the certain area. The more area, students and programs offered, a job in of ROs becoming increasingly complex and require more intense coordination. Coordination is done directly and also using the media. This means that coordination at Surakarta and Bandung lasted quite effectively.

Communication in Surakarta and Bandung ROs is also effective. Communication used is downward communication, upward communication, communication sideways and diagonally, and informal communication. Communication in Surakarta and Bandung ROs is done by face to face or using media such as email, SMS, phone, and social media. Surakarta and Bandung ROs also develop informal communication so that communication in the organization of ROs did so effectively.

UT policy provides flexibility to the Head of ROs to modify their own internal management also contribute increasing organizational effectiveness.

The implications of this study is that if an organization has a high level of complexity, the organization needs to be designed with autonomy to design of the division of services in the area, tolerate the use of informal communication lines, and utilize IS to facilitate network management services.

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THE INTERNET USAGE ASPECTS OF DISTANCE EDUCATION STUDENTS IN REGIONAL OFFICES

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Abstract

Universities Terbuka (UT) or Indonesia Open University makes use of online media in the learning process, due to the distance between the source of learning with students. As a resource, UT provides information on registration, the learning process, as well as the evaluation of learning, but many students aren't taking advantage of that information. This research aims to describe how the students use the feature on UT website. This research method using online surveys. The sample of respondents 220 obtained spread over six Regional offices: Bogor, Bandung, Purwokerto, Semarang, Surakarta, and Denpasar. The results showed that the average knowledge of aspects of the respondents is very high especially in the aspects of the knowledge of how to use the internet, the respondent agrees to use information about learning and administration; generally respondents have low ability to access the internet.

Keywords: *University's website, internet usage, distance education*

Introduction

The development of information technology causes no communications should be done by face-to-face, but there are many choices of media such as online media that use the internet. Besides finding information through online or browsing, internet media also provides facility to send letters via e-mail. E-mail messages can be delivered by crossing the boundaries of space and time. Although, it is different from sending messages by face-to-face, where communication partner can feel the existence of verbal and non verbal communication.

Although the internet is readily available and easily accessible but not everyone can easily access it. This fact encourages researchers to find out for what causes it, among other things by researching the utilization of the internet among students. According to Lewin (1951), the rise of behavior on one's self is determined by two factors, namely the internal factors that exist on itself for example, personality, intelligence, values as well as the condition of the fission, and external factors that exist outside of himself as everything that exists in the environment such as equipment, weather, people around him. In this study researchers discuss only the internal factors only.

The statement expressed by the Lewin if associated with the use of email, then the factors of the inner self that influences a person using email is individual factors (personality traits). While outside factors that affect of using email among other things is the social contact, internet facilities, availability of using internet to send email.

Fulk, Schitz and Steinfield (1990) did a study of email users through social influence theory approach. Fulk suggests that the selection of the media influenced not only by the characteristics of the media used, but also by the characteristics of the individual and the social context with whom the individual is related or to communicate.

While external factors that affect the choice of self way of communicating. One of the factors was a others become part of social contact. Social contact is a colleague, boss, and those who are in social networks is also greatly influences behavior in choosing the communication medium (Fulk at all, 1990).

In addition to social contacts, how to communicate excellence to deliver a message also influenced the choice of ways to communicate. There are two communication theories are widely used to discuss information technology as a communication media: first, Social Presence Theory/SPT (Short Christie Williams, 1976). This theory emphasizes the ability of the media to accommodate the social presence of the individual. This social presence includes not only physical presence but also the various expressions of emotion that can display the required signals making communication meaningful. Good communication media can give to the perpetrators of the communication, the opportunity, to present involved in the conversation. Second, Media Richness Theory/MRT looked at communication media based on the ability of the media to convey information (Trevino at all, 1987). Sitkin (Minsky in Marin, 1999) mention there are two components to determining the wealth of media, namely the ability to convey information and the ability to convey information about the individual carrier information. Thus the core of the MRT is on the ability of the media to give feedback, nonverbal cues, maintain the integrity of the message and present the expression of emotions. Based on these criteria then SPT and MRT explained that face-to-face communication as the richest media, then followed by video conferencing, synchronous audio and telephone text based chat, audioemail and asynchronous threaded discussion.

In its distance learning system is indeed different from face-to-face education system, where between students with lecturers did not take place face-to-face, but instead use the internet media. Internet media provided by Universitas Terbuka (UT) or Indonesia Open University can be retrieved from <http://www.ut.ac.id>

Through the website of UT students can search a variety of information related to the process of learning information such as academic information (curricula, learning materials, exam materials, learning and enrichment materials etc.), academic administration (registration, purchase materials, print the exam results and so on) as well as information that is administration (graduation and others). However, there are still many students who have yet to make use of the information contained on the UT website optimally.

On the system of distance education, one of the means to evoke the atmosphere of learning as students felt on face to face is to provide the information or media where students can conduct the consultation. Students who encounter obstacles or problems in the process of their learning can send the problem on the service information that is provided by UT website. UT also facilitates their learning services at some of the features on the web UT.

Afriani (2007) research found that of 75% respondents say that they experience difficulties in accessing tuton, it is due to the presence of obstacles faced include: a) login take long, b) the existence of the limitation of the means of the internet, and c) students do not know how to access the tuton.

Susanti (2007) research about online learning, mentioned that the low participation of students in tutorials onliner relate to the ability of the use of technology in student learning. Student recruitment system, one of which requires students has the ability to use communication technologies, as seen from the ownership of the email address and the ability to use the email address by the student, it is not always applied.

This research aims to explain: a) how the knowledge of students about the internet, b) how the attitude of students in utilizing the internet, c) how the students utilize the internet to obtain academic and administrative information.

Research Method

The study was descriptive in approach and using survey method with the distance education students from Libraries Study Program in Universitas Terbuka (UT) that register in 2013.1 i.e. 4700 respondents, with a sample of a number of 250 respondents. However, after a number of scrutiny only 222 questionnaire that qualify can be processed. Respondents came from regional offices of UT in Bogor, Bandung, Semarang, Surakarta, Purwokerto, Denpasar and Mataram.

Results

Characteristics of Respondents

One of the information obtained from the results of this research are the demographic characteristics of the UT student. It is felt important considering UT is the institutions of higher distance learning that one of its criteria is no limitation on the number of student admissions.

Table 1: Characteristics of Respondents

Characteristics	Category	Total Number	%
Gender	Male	94	42,34%
	Female	128	57,66%
Marital status	Married	141	63,51%
	Not married	81	36,49%
Educational background	high school	140	63,06%
	vocational high school	49	22,07%
	Diploma's degree	17	7,66%
	Bachelor's degree	16	7,21%

The Origin of Respondents

Research findings indicate that respondents came from 7 (seven) regional offices of distance learning Program (Unit Program Belajar Jarak Jauh = UPBJJ) UT, those were: Surakarta, Denpasar, Bandung, Bogor, Semarang and Purwokerto, Mataram.

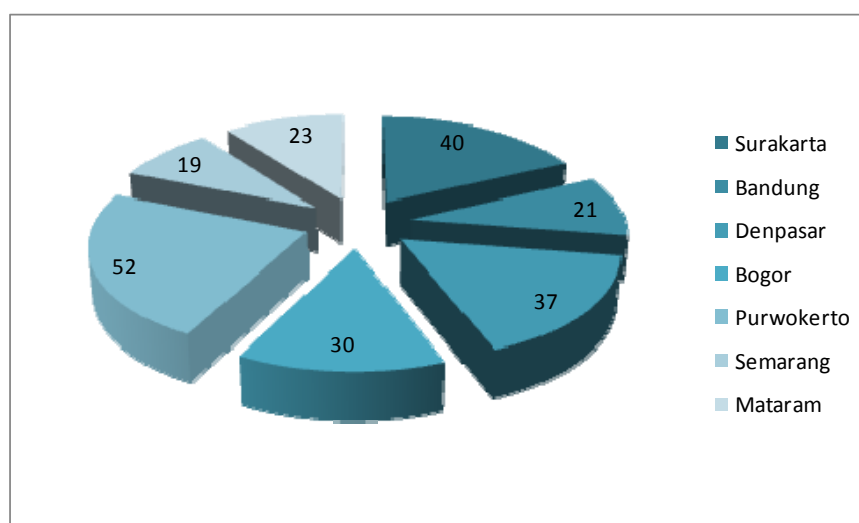


Figure 1: The number of respondents each UPBJJ

Prepared from primary data N = 222

Level of Students Knowledge

Figure 2 shows that most respondents know how to use google to search for information in the learning process as needed. Respondents also knew about how to access and search on internet and respondents also had the knowledge of managing files and manage facebook.

Research findings indicate that most of the respondents know how to discuss on the UT community forum. Information on how to discuss on the community forum at UT website needs to be improved because UT as a distance education university where its education system is not done face-to-face, internet media as a communication media are indispensable to make room for the students to discuss, so insight students about courses substance can be increased.

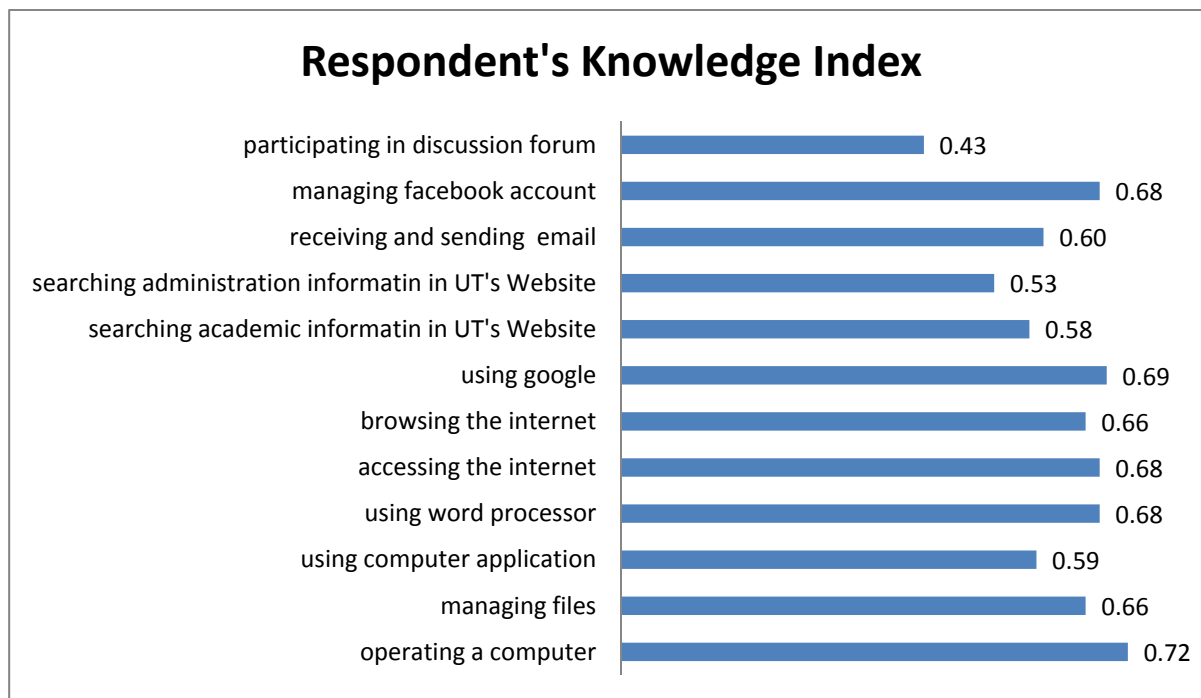


Figure 2: The level of respondents knowledge about UT website.

The total of 68% of the respondents know how to manage their facebook account. These findings provide information that respondents are already skilled in accessing the internet, among other things, about how to sign in to facebook account, downloading information on facebook, save, comment and send a message to facebook. Membership of facebook in this research are limited members in their study group.

More than a half of the respondents know how to receive and send emails. Most of the respondents had the knowledge of how to obtain information which is either academic or administrative information. This research found that respondents know how to find good information via the internet as well as the information on the UT website, such as to find out information about how to use the google machine, how to access a computer on the internet, and how to write the program word information. These findings have interpretation that the majority of respondents are already accustomed to using the internet.

The Attitude of Respondents towards Internet Media

Figure 3 shows that more than half of the respondents agree that internet media is used for online tutorials, in addition, respondents also agree that through the internet students can communicate and discuss with fellow students so that if there are problems in learning, sharing and can be found the solution.

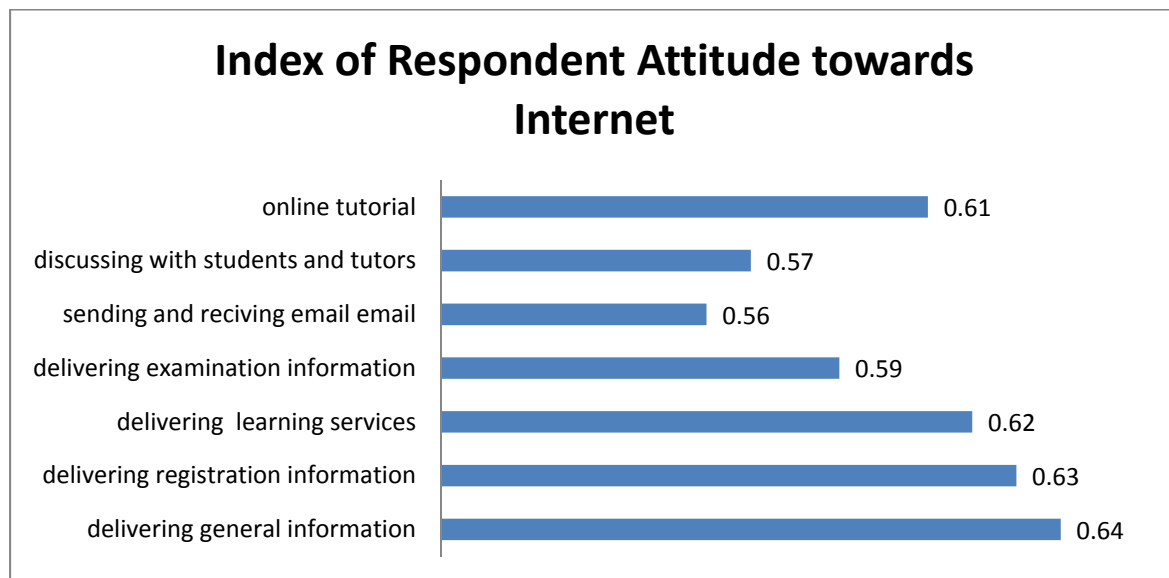


Figure 3: The attitude of Respondents towards Internet Media

Further findings are more than half of the respondents agreed that through the internet students can obtain information about the preparation, the implementation and the announcement of the final exams of the semester. More than half of the respondents agreed that the benefits of the internet that can be used to convey both the academic information services as well as the administration. To find out information about registration, more than half of the respondents agreed to use the internet (in the UT website). More than half of the respondents agreed that general information about UT is on the website.

Based on a few questions about the respondent's attitude towards the internet, it can be concluded that the majority of respondents agreed that through the internet especially on web UT, students can obtain various information, join the online tutorial, and get learning services.

The Level of Student Behavior

Figure 4 shows that the average respondent is able to use the internet to access to community forums, through this forum students did not feel alone, because they can communicate and discuss with fellow students from the same study program. Furthermore the average respondent is able to manage the information on the internet, so that respondents can download and send messages, and also able to access to the digital library, access to online tutorials, access to the UT catalog, as well as being able to perform searching in google.

Based on some questions about the respondents behaviour towards internet media, it can be concluded that the average respondent is able to access to some of the features found on the UT website, i.e. community forums, academic services, online tutorials, digital libraries.

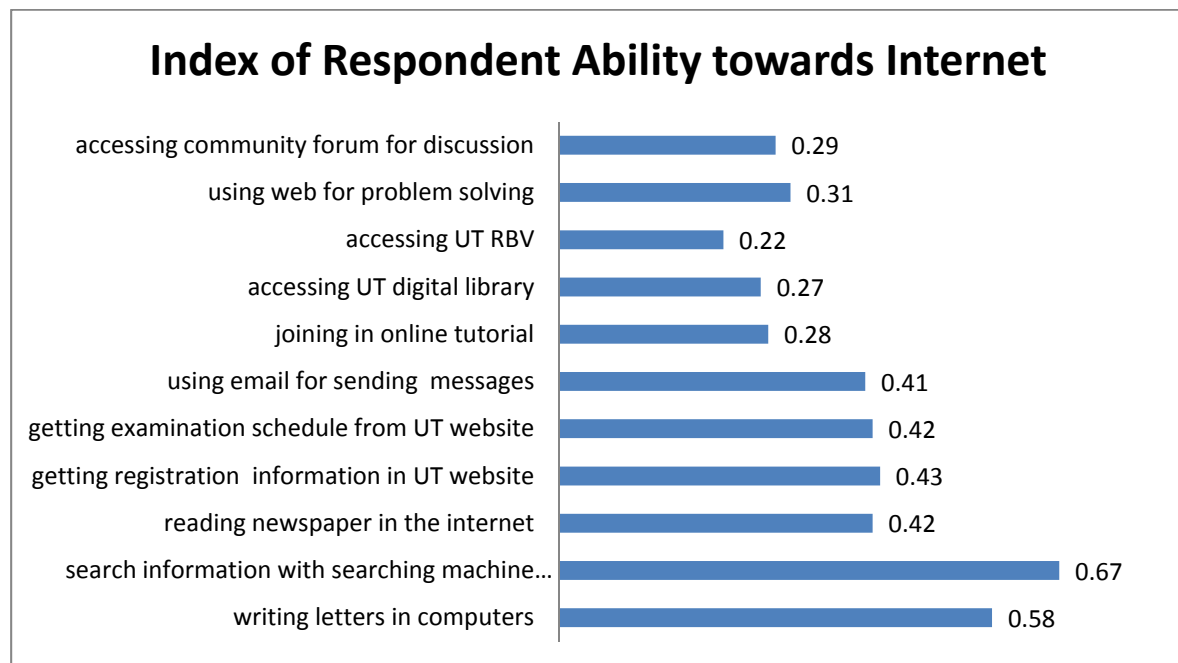


Figure 4: The level of Student Behavior

Conclusions

- The majority of respondents have enough knowledge about how to manage message/information contained on the internet especially on UT website.
- The majority of respondents agree that internet media especially on UT website have a variety of information ranging from the registration of the learning process and the evaluation of learning.
- The majority of respondents are able to use the search engine which is useful to add insight into the learning process

Suggestions

- There needs to be repeated dissemination of the benefits of internet media in the learning process of students. This socialization can be done through forums such communication in the student orientation for new students (OSMB), activity-face tutorials and online tutorials, discussions in study groups and so on.
- Further research needs to be done about the extent of utilization of the internet in the learning process for students with other regional offices in Indonesia.

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A STUDY OF ACADEMIC PROGRAMMES THROUGH TELE-EDUCATION: A CASE OF PAN AFRICAN e-NETWORK PROJECT AT IGNOU

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Abstract

The study makes an attempt to study the effectiveness of three academic programmes viz., Diploma in HIV and Family Education, Diploma in Early Child Care and Education, and Certificate in Nutrition and Child Care launched through tele-education under Pan-African e-Network Project. These programmes are relevant and popular among the learners of the African countries. The study analyses the knowledge and skill components of these programmes, examines the usage of the tele-education sessions and support services provided by the experts from IGNOU, examines the success rate of the learners of IGNOU, identifies the limitations of the e-Network, and provides suggestions for making the tele-education more effective. All the three hundred forty five learners who have successfully completed the programmes were considered as sample of this study. The contents of the three programmes, 14 induction programmes, 547 tele-sessions, 3050 e-mails received from the learners were thoroughly analysed. Though a significant percentage of learners expressed satisfaction with regard to various facilities available in the project, there were some limitations which have been highlighted. It is suggested to provide an effective virtual learning environment which includes: online registration; content management system (e-content, e-books, digital depository); assessment builder (quiz, TMA etc.); instruction and collaboration (tele-session, chat, discussion forum, e-mail etc.); learning management system; learner tracking; and Online examination and declaration of results.

Introduction

The Pan African e-Network Project which started in 2007 and still continuing as an important tele-education project indicates the successful synchronization between more than fifty African countries through a satellite fibre optic network to India and to each other to enable access to and sharing of expertise between India and African states in the areas of tele-education, tele-medicine, e-governance etc (Pan African e-Network Project, 2014). Approximately 15,000 students have been admitted for various programmes on offer by 7 (seven) different Indian Universities. The project is described as the biggest ever ICT sector project in Africa connecting rural and underserved areas. The project is seen as a hand extended by India for economic and strategic interest in African community.

The e-network is made up of a large undersea cable network and satellite connectivity provided through C-Band transponders of the INTELSAT-904 or RASCOM satellites. Each partner nation from Africa has a tele-education terminal, a telemedicine terminal to the network. The network, designed to have 169 terminals and a central hub that delivers services, uses advanced that is

compatible with broadband technologies like WI-FI and WI Max. The project is being implemented by the Telecommunications Consultants India Limited (TCIL) which is responsible for the project's design, operationalization and maintenance. A data centre at its office in New Delhi acts as a hub for all Indian sites (Pan African e-Network Project, 2015).

IGNOU being a global leader in enrollment and its presence overseas under the ODL system of learning, it was decided by the government authorities to provide an opportunity to teach African learners with a new technology. Pilot phase of the project started in 2007 with 40 learners from two prestigious Universities of Ethiopia for masters in Management Programme for two specialization i.e. Marketing and Human Resource Management. Within a stipulated period of two and a half years 34 learners successfully completed their programme and were awarded the degrees.

IGNOU enrolled 671 learners from four African countries in the main project in January, 2010. Gradually this number increased to 2480 till July 2014 and the learners were admitted for six more programmes on offer under the project from 19 African countries. After completion of 5 years, the term of the project has been extended for 2 years, i.e. upto July, 2016.

Region wise participation of African countries with IGNOU is as follows: Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Ghana, Guinea, Mali, Niger, Senegal, Sierra Leone from West Africa; Eritrea, Ethiopia, Madagascar, Mauritius, Rwanda, Seychelles, Sudan, Tanzania and Uganda from East Africa; Botswana, Lesotho, Malawi, Mozambique, Zambia from Southern Africa; Burundi, Cameroon, Congo, Democratic Republic of Congo, Sao Tome and Principe and Gabon from Central Africa; Egypt from Northern Africa.

Facilities Provided to the Learners in the Pan-African e-Network Project:

- Learners can access the recorded sessions through knowledge management system of the Pan African e-Network Portal.
- Course contents are available in the Pan-African e-Network Portal and can be downloaded.
- Regular support services are provided through induction programmes, e-mail, tele-sessions and so on. Learners may send assignments, synopsis of the projects, final project etc., online and through post.
- Evaluated assignments with tutor comments, project proposals, grade cards etc., are sent to the learners through online and by post.

Review of the Related Literature

As the researcher are showing interest, few studies have been reported on Pan African e-Network Project so far (e.g. Sunita and Tara 2012, Nanda and Saxena 2013; Munyoka, 2014)

The paper of Sunita and Tara (2012) sets out to explore the paradigm shifts in learning culture brought by the advent of online learning in the mostly print-based open distance learning system at the Mauritius college of the Air, Their research explores behavior patterns engendering a new ethos conducive to effective e-learning. The researchers have made suggestions with regards to connectivity for smooth delivery of lecturers and better real time interaction between lecturers and learners. They have proposed to set up an e-platform to link up learners as a mutually supportive learning community engaged in the construction of knowledge.

The study of Munyoka (2014) evaluates the impact of tele-education system on learners pursuing their Masters (MSc.) in the disciple of Information Technology and Finance and Investment Analysis for the five major learning centers of the College of Open distance learning in Botswana across five major towns and cities in Botswana. The key areas of assessment were based on: depth of learning and performances, learner satisfaction in line with learning pace and grasping of concepts and learner

productivity as measured by overall pass rate. The findings showed that the use of tele-education system in open distance learning has positively increased the learners' depth and satisfaction of learning. The research concludes that tele-education has a positive impact on the way learners learn.

Another study (Nanda and Saxena, 2013) made an attempt to describe the innovative form of virtual education through Pan African e-Network and looked into its impact on the African learning community. The general feedback was that the learners were benefitted and the demand of this form of education increased as the learners' enrolment increased especially for the management programme.

Significance of the Study

Through attempts have been made to study the impact of tele-education with respect to Pan African e-Network Project, the previous studies are based on the feedback of the specific country. The present study is different in the sense that the study is carried out for more than 2 years since 2012 in three programmes, systematically monitored the induction programmes, tele-sessions (virtual classes), movement of assignments and projects submitted by the learners, analyses the e-mail and feedback of the learners from twelve countries in Africa with regard to contents of the study materials, PPTs and presentations by the experts during tele-sessions, evaluation of the assignments and projects, term end examinations and so on. The study also analyses the success rate of the learners keeping in view the knowledge and skill development aspects of the academic programmes launched by IGNOU.

Objectives

The objectives of the paper are:

- (a) To provide an overview of the Pan African e-Network Project with special reference to IGNOU;
- (b) To examine the usage of the tele-education sessions and support services provided by the experts from IGNOU;
- (c) To study the success rate of the learners of IGNOU in selected programmes;
- (d) To provide suggestions and recommendations to make the tele-education more effective keeping in view the knowledge and skill components of the programmes launched by IGNOU.

Methodology

(a) Academic Programmes

Three Academic Programmes launched by IGNOU under this Project have been identified:

- (i) The Diploma in HIV and Family Education (DAFE)
- (ii) The Diploma in Early Child Care and Education (DECE)
- (iii) The Certificate in Nutrition and Child Care (CNCC)

All these programmes have tremendous relevance to the learners of African countries. These programmes are very popular among the learners of African countries as evident from the enrollment data as detailed below:

- (i) DAFE: Total 571 from 10 African countries.
- (ii) DECE: Total 431 from 7 African countries.
- (iii) CNCC: Total 177 from 7 African countries.

(b) Sample

- (i) Three hundred forty (340) learners who have successfully completed their programmes (DAFE, DECE and CNCC) have been selected for this study. The learners belong to 12 African countries viz; Botswana, Democratic Republic of Congo, Gabon, Lesotho, Malawi, Mauritius, Mozambique, Niger, Rwanda, Somalia, Uganda and Zambia. The study had been carried out since 2012; the induction programme, tele-sessions (virtual classes), assignments, projects e-mails, term end examinations etc. have been systematically monitored. The basis for selecting the successful learners for the study is that their responses, participation in the project, performance, responses (feedback) etc. gives us a clear picture with regard to the objectives of the study.

(c) Analysis of Induction Programme

Induction Programme is a very important component of tele-education programme. This is conducted immediately after the learners are enrolled and positively before the tele-sessions starts. In this programme the learners are informed about the objectives of the programme, study materials, delivery mechanism, support services, tele-sessions (virtual classes), strategies for communications, assignments, evaluation of assignments and projects, term-end examinations and so on. The induction programme is recorded in the repository that can be accessed by the learners as ready reference during the course of study.

(d) Analysis of Tele-sessions (Virtual Classes)

Total 547 tele-sessions (each of one hour duration) have been analysed. These tele-sessions are meant for explaining the difficult concepts, clarifying doubts and answering the queries raised by the learners after going through the contents of the programme.

(e) Analysis of e-mails

In this project e-mail has been used as an important vehicle of communication. Contents of 3050 e-mails received from the target learners have been analysed. The learners sent these e-mails during their course of study to express their needs and satisfaction as well with regard to various components of the programmes as suggested by the experts during the induction programme, tele-sessions and through written communication.

(f) Analysis of Performance in Projects

A project is generally a research assignment given to the learner which requires serious effort, fact finding, analysis and reporting. As the project is related to the theme and sub themes of a programme, it needs better understanding of the contents and application of the same for successful completion. Performance of a learner in the project reflects his/her capability and skills he/she has developed during the course of the study. So the analysis of performance in projects in DAFE and DECE programmes has been done.

Results and Discussion

Background Information of the Participants

The background information of the participants (total 345) has been detailed below:

- Out of 340, 70% learners were male.
- Around 55% belonged to age group 26-30, 35% 20-25 years and others above 30 years of age.
- Most of the learners have 10+2 or equivalent at the time of enrolment, less than 10% have higher qualification.
- The learners do not have any prior experience in tele-education.

- The learners accessed the tele-education facilities at their respective learning centers. E-mail facilities were accessible to the learners either personal or through learning centre.
- All learners were conversant with English language.

How the learners received local support at the learning centers in Africa?

- All information was initially forwarded to the learning center coordinators by the managerial and support staff at IGNOU.
- Learning center (LC) coordinators forwarded the information to the respective learners either by mail or as notification at the Learning center.
- Learners initially contacted the LC Coordinator regarding the admissions, tele-session schedule, etc.
- Learners were introduced by the LC Coordinator about the mechanism of the tele-education method with the help of engineers at the respective LC.
- Each learner data is entered at the Pan African e-Network portal and the user name and password is provided to each learner for downloading the e-content, PPTs, lectures etc from the portal.
- Learners are assisted by both LC Coordinators and the IGNOU support services unit in availing the best possible support to them during the course of study.
- Learners attended the Induction Programme through tele-sessions directly or accessed the recorded version available in the portal.
- Learners used to send the e-mails directly to the IGNOU officials on regular basis.

Analysis of the Contents of the Academic Programmes

Diploma in HIV and Family Education (DAFE)

Objectives of the Programme

The main objectives of this programme are (a) to provide basic and accurate information about HIV/AIDS, sex and sexuality, family life education, alcohol and drugs and communication and counseling as well (b) to impart integrated understanding to the learners about the issues involved in HIV/AIDS and behavior modification (c) to enhance the knowledge and skills of functionaries involved in HIV/AIDS and related issues (Programme Guide, DAFE, IGNOU, 2012)

Analysis of Knowledge and Skill Components

An in- depth analysis of the contents and project components reveal that to achieve the objectives of the programme very relevant contents have been developed with great care and following systematic instructional design for open distance learning. Some of the areas in which the successful learners have developed valuable knowledge and skills are: importance and relevance of information, education and communication for HIV; development of personality and moral values in life; link between alcohol, drugs, STDs and HIV; how HIV transmit and how to avoid transmission; mothers role in prevention of HIV/AIDS, counseling in HIV and family welfare; skills for solving individual problems through case study; skills for writing report on health care facilities in block/community; skills for organizing programme on developing awareness programme through innovative strategies; skills in preparation of an education aid/kit and so on.

Diploma in Early Child Care and Education (DECE)

Objectives of the Programme

The main objectives of this programme are (a) to help learners develop knowledge, attitude and skills necessary for working with young children (i.e. children up to 6 years of age) and equip them to work in, organize and manage child care centers; (b) to provide in depth theoretical and practical knowledge related to early childhood care and education. The project work and practical that form a major component would help the learners develop the positive attitude and skills to work effectively as childhood educators (Programme guide, DECE, IGNOU, 2012)

Analysis of Knowledge and Skill Components

An in-depth analysis of the contents and project components reveal that to achieve the objectives of the programme very relevant and scientifically designed curriculum contents have been developed. Some of the areas in which the successful learners have developed valuable knowledge and skills are: developing sensitivity towards the needs and rights of children; identifying common childhood illness; skills for taking care of sick child; taking preventive measures; providing services to special children; skills for managing children's programme; skills for day-to-day interaction with children, developing strategies for communication with children, skills for managing child care centers and so on.

Certificate in Nutrition and Child Care (CNCC)

Objectives of the Programme

The main objective of this programme is to help the learners develop knowledge and skills in the area of nutrition and early childhood care and education.

Analysis of Knowledge and Skill Components

In-depth analysis of the contents reveal that the following are the main areas in which the successful learners have developed knowledge and skills: basic concepts of nutrition; planning balanced diets; meal planning for pregnant and lactating women; basic knowledge in child care and development; familiarization with meal patterns typical to a particular region; selecting right kind of food keeping the cost in mind; effective utilization of food resources, food budgeting and so on.

Analysis of Induction Programme

Four induction programmes were conducted for each diploma programme i.e. DAFE and DECE and six induction programmes for CNCC.

At the beginning of any programme, learners were introduced with the methods of teaching-learning during this kind of innovative programme which they were not aware of earlier. Complete schedule of the tele-sessions were provided to the learners. During the course of study learners have an opportunity to interact with the faculty during the tele-sessions and thus making it an innovative way of teaching and simultaneously there queries were replied by the experts. The learners were given guidance on study skills i.e. how to study in the new environment. During the course of study the each learner was assessed by three ways i.e. Tutor-marked Assignment, Term End Examination and Project work.

Analysis of Performance of the Learners

Programme wise analysis reveals that total of 571 learners enrolled in DAFE programme from 10 African countries, and 100(17.5%) have already successfully completed their programme (till July 2014 term end exam).

Total of 431 learners enrolled in DECE programme from 7 African countries, and 218 (50.58%) have successfully completed their programme (till July 2014 term end exam).

Total of 177 learners enrolled in CNCC programme from 7 African countries, and 22 (12.43%) have already successfully completed their programme (till July 2014 term end exam).

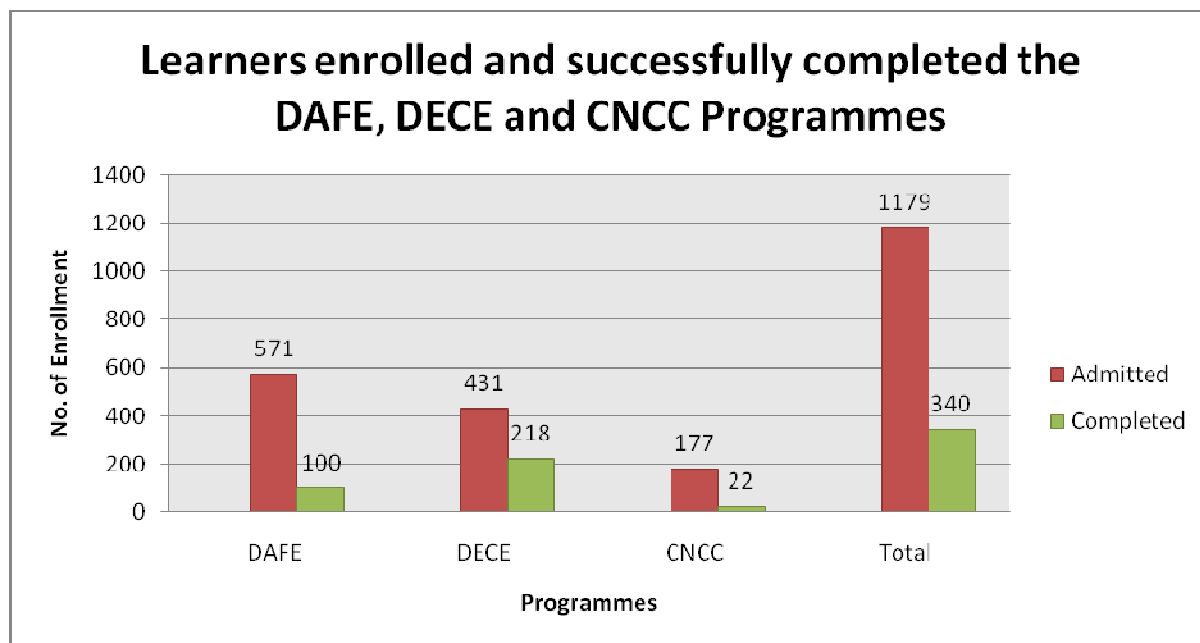


Figure 1: Shows the number of learners enrolled and successfully completed the DAFE, DECE and CNCC Programmes

It is noted that 23% learner of DAFE and 20% DECE have obtained 'A' grade in project work. The interpretation is that their performance is 'outstanding', they have complete knowledge and skills and mastered all objectives related to the area. It is also noted that 62% learners of DAFE and 64.65% learners of DECE have obtained 'B' grade in project work. The interpretation is that the performance is 'very good', they have complete knowledge of most contents, skills, and have mastered most objectives related to the area.

Analysis of e-mails

The medium of interaction with the learners and Learning Center Coordinators in African Countries was mainly through email. Learners and the administrators in respective countries were replied through emails. The interaction through emails was related to: Administrative work related to MOU's, Addendum etc., Registrations of the learners, Tele-sessions, Assignments submission, Synopsis Submission, Project Submission, TEE related queries, Exam Stationary to African Countries, Grade Cards, Result declaration, Final Degrees and so on.

Depending upon the nature of the query the appropriate reply to the learners and the LC coordinators were made in appropriate duration which varies from one day to seven days depending upon the nature of the query.

As mentioned earlier the interaction mode with all was through emails, around 3050 emails were received from the participants of this study (3 programmes) and LC coordinators related to their course of study. On an average 8 mails were received from various learners from different countries and were replied as an important component of support services.

These learners were free to provide feedback on various aspects of the programme. They were motivated to provide feedback on regular basis. Analysis of the response reveals that around 50% learners were satisfied with the nature of the contents in the study material and contents covered in the tele-sessions, interaction with the experts in a limited period of time.

Around 60% learners were satisfied with the action taken by the officials with regard to their queries and the overall support provided. More than 80% learners of DAFE and DECE were satisfied with their grades in Project work which is a very important component of the programme and especially development of the skills in related areas.

The findings with regard to learner satisfaction are in line with the findings reported by Munyoka (2014).

As per the prevailing conditions of African countries Early Child Care and nutrition, issues related to HIV/AIDS need to be addressed. A huge human resources need to be developed for tackling the issues and for improving the living conditions in the society.

Skill Development with the help of ICT may change the scenario. Lack of opportunity is a major drawback as the learners are unskilled and they are not being informed about their capabilities.

Seeing the success of the project various African countries requested for some more programmes including vocational training programmes, teacher's education, and even Ph.D in various disciplines.

For better development of the society education is the basic necessity which will focus on sustainable human development, equity and inclusive growth.

Information Technology (IT) can be a synonym with Internationally Together. Political will and the exploitation of the resources available can help to develop skills among the learners. We can say that the Project - Pan African e-Network Project may be termed as the backbone for the development of African learners who were unreachable.

Conclusion

Though a significant percentage of learners have expressed satisfaction, the Pan-African e-Network Project has some limitations such as, the language of delivery was only English. As a result the registrations were mainly from the English speaking countries in Africa. The network was 4 Mbps IPLC, a point-to-point connectivity with limited delivery options. Facility for parallel sessions in different courses was not available.

In the next phase, a more effective model needs to be developed and implemented keeping in view both the knowledge and skill development of the learners.

An effective virtual learning environment may be provided. The features of an effective virtual learning environment include: Online learner registration; Content management system (e-content, e-library, e-books, digital depository); Assessment builder (quiz, TMA etc.); Instruction and collaboration (tele-session, chat, discussion forum, e-mail, social networking etc.); Learning management system; Student tracking and report generation; and Online examination and declaration of results.

The virtual learning environment will use a range of integrated web-based applications that will provide teachers, learners and others involved in virtual education with information, tools and resources to support and enhance educational delivery and management. The applications that will form part of the virtual learning will include web-pages, e-mail, message boards, discussion forums, text and video conferencing, shared online social areas, as well as assessment, management and teaching tools. The selection of tool however will depend on the kind of interaction needs to take

place in real time of not. Synchronous delivery systems demand relatively high bandwidth, sophisticated hardware and software.

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FACTORS LEADING TO EFFECTIVE TEACHING OF MOOCs

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Abstract

As a relatively new mode of course delivery, institutions have considerable uncertainty about becoming involved in the provision of MOOCs. It is important for institutions and academics who plan to offer MOOCs to be aware of how teaching can be best delivered to promote effective student learning. This paper surveys the factors which facilitate effective teaching through MOOCs. The study first examines the literature covering the characteristics of teaching in MOOCs, the profile of participants, the instructional design of course materials and/or the course assessment methods. It then summarizes the factors which are conducive to the teaching effectiveness of MOOCs. An empirical investigation was conducted to review a random sample of MOOCs, sorting out the extent to which the factors can be identified in these courses. The factors leading to effective teaching of MOOCs revolve around four areas, viz. attraction, participation, interaction and consolidation. In the relevant literature, attraction focuses on the importance of an impressive introduction or trailer for engaging students and helping them to become familiar with aspects of the course (e.g. the format and expectations of the instructors). For participation, the effective use of multimedia — such as video lectures, audio files and info-graphics — helps to arouse students' interest and promote their retention and learning. It has also been suggested that certificates or digital badges should be issued and that daily reminders should be sent to encourage participation and the completion of course activities. For interaction, the facilitator plays a crucial role in triggering discussion, providing feedback and sustaining interaction. The effective uses of discussion boards and social networking sites have also been highlighted for promoting peer-to-peer interaction and discussion about the materials being taught. For consolidation, assignments are important for learning, as they allow students to retrieve, interact and reflect on knowledge. Based on these factors, the potential implications for institutions delivering MOOCs are discussed.

Introduction

In just a few years since their emergence, massive open online courses (MOOCs) have attracted a large number of institutions to offer courses free of charge. The provision of MOOCs allows an institution to reach a much wider range of students from different backgrounds than by using a traditional mode of teaching.

However, as a relatively new mode of education, there remain many uncertainties for institutions about involving themselves in MOOC provision. An institution which plans to offer MOOCs must answer a key question — How can teaching be delivered effectively in MOOCs?

Despite the benefits that providing MOOCs may offer, some studies have shown that certain aspects of the MOOC environment may be detrimental to effective teaching and learning. For example, the massive scale of MOOCs implies a low instructor-to-learner ratio. As MOOC instructors have to take care of a very large number of students, they can provide little individual attention to each student which may have an adverse effect on their learning outcomes (Hew & Cheung, 2014). Also, the massive information available in the discussion forums for MOOCs may be a hurdle for students' learning. As reported in Knox (2014), too many simultaneous discussions and interactions in a MOOC paralyzed the participants who attempted to catch up with the key postings and follow the course schedule.

It is therefore important for institutions and academics who intend to offer MOOCs to be aware of how teaching can be best delivered through this new learning environment for effective student learning. This paper addresses this issue by investigating the factors conducive to the effective teaching of MOOCs; and an empirical evaluation is conducted to find out to what extent these factors can be identified in existing MOOCs.

Research Method

This study consists of two parts. It first identifies the factors for effective teaching of MOOCs through examining the relevant literature from Google Scholar and reviewing and summarizing the key factors. The keywords used for searching articles included: ‘effective teaching & MOOC’, ‘effective MOOC design’, ‘good MOOCs’, ‘peer feedback’, and ‘MOOC assessment’. Only the articles reporting empirical studies were included to ensure that the factors were generalized from empirical experience.

The second part assesses the extent to which the factors can be identified in MOOCs which are currently available. Thirty-two MOOCs were selected from four platforms: Coursera, edX, FutureLearn and OpenLearning. All were taught in English, with all the course materials available. The data were gathered in September 2015.

Results

The factors were categorized following the stages of course delivery from preparatory work before a course begins to follow-up work after completion of the MOOCs, that is, it focuses on preparation, attraction, participation, interaction and consolidation.

Preparation

Effective teaching of MOOCs starts from a thorough understanding of the MOOC environment, before engaging in course design. Teaching MOOCs is complicated in terms of its ‘online, open and massive’ nature. The wide range of participants might not share the same learning goals (Andersen, Garp, Nellesmann, Nielsen, & Ørngreen, 2014; Wang & Baker, 2015). Their enrolment is likely to be due to the ‘openness’ feature of MOOCs, which means that not every participant would be equally interested in and committed to learning (Chiappe-Laverde, Hine, & Martínez-Silva, 2015). Particularly for lecture-like xMOOCs, teaching is usually conducted in a one-way approach through videos without knowing how the content has been received by students (Ross, Sinclair, Knox, Bayne, & Macleod, 2014). Teaching strategies, expectations and evaluation need to be reengineered in the MOOC context.

Effective teaching is not possible without understanding the perspectives of MOOC learners. Richter and Krishnamurthi (2014) made a number of recommendations for planning a MOOC, among which the first was ‘to participate in several MOOCs on multiple platforms’ (p. 411). Stepping into the MOOC learners’ shoes helps to identify and tackle issues that learners may face. Ross et al. (2014) also shared first-hand experience of being learners by enrolling in four MOOCs in order to evaluate them.

Not all existing pedagogies are suitable for direct adoption as they were developed before the emergence of MOOCs. Richter and Krishnamurthi (2014) recommend that universities and academics explore new and emerging learning theories related to MOOCs as past theories might be unsuitable for the MOOC context. Also, Ross et al. (2014) stress the importance of context to justify the design of a MOOC, such as the differences between cMOOCs and xMOOCs in pedagogical styles and learning purposes (Daniel, 2012; Yuan, Powell, & CETIS, 2013).

In considering the topics for MOOC delivery, Richter and Krishnamurthi (2014) recommend choosing ones that the faculty members have expertise in and are passionate about. This would make the teaching more natural.

Finally, the target audience should be determined in advance. Despite participants on a course being from heterogeneous backgrounds, the learner profiles may vary from course to course in terms of age, country, educational background and so on. For example, for the open course *MobiMOOC*, the majority of students were 51 to 60 years old (de Waard et al., 2011); but for another course, *Future of Learning*, most students were aged from 34 to 44 years (Bremer, 2012). Characteristics of learners should be identified as far as possible to help designing the MOOCs accordingly.

As noted before, in this study, the factors for effective MOOC teaching were categorized into four areas — attraction, participation, interaction and consolidation. For *attraction*, how to draw and arouse the interest of ‘target learners’ in the course is discussed. The emphasis in *participation* is on the ways to make learners engage in learning activities and interact with the course contents. *Interaction* centres on encouraging learners to interact with each other to foster learning. Finally, in *consolidation*, assessment issues are addressed.

Attraction

The first impression of a course has a critical effect on students’ decisions to continue studying it or not. Therefore, an effective introduction at the beginning of a course is crucial for drawing students’ attention and arousing their interest. Table 1 summarizes ways to attract learners. Given the diverse background of students, it is essential to provide basic information that lays out the principles and prerequisite knowledge early on in the course (DeBoer, Stump, Seaton, & Breslow, 2013; Kellogg, 2013). A detail introduction or trailer enable students to know more about the course and the expectations of the instructors (Stacey, 2014). Making use of introductory or welcoming lectures helps to involve students and familiarizes them with the course format (Henshaw, 2015).

Table 1: Ways to Increase Attraction

Measure	Benefit	Source
Detailed introduction/video trailer	Provides course information and	Stacey (2014)
Welcoming lecture	lays out instructors’ expectations	Henshaw (2015)

Participation

After drawing learners into enrolling on a course, measures should be taken to maintain their attention, participation in the course, and interaction with others. Table 2 summarizes ways for promoting learners’ participation.

It has been widely reported that effective use of multimedia, such as video lectures, audio files and info-graphics can arouse students’ interest, and facilitate their retention and learning (Adamopoulos, 2013; Conole, 2013; Kellogg, 2013). Also, some courses have issued certificates to encourage participation (Bremer & Weiss, 2013) or badges to showcase participation and accomplishments (Bremer, 2012). Although it is not sufficient to rely solely on them, these extrinsic rewards have been found helpful.

In the MOOC environment, interaction with instructors is usually minimal (Nkuyubwatsi, 2013). Reflecting on their MOOC teaching experience, Ross et al. (2014) stated that students were very much concerned about the presences of their instructors from the beginning of a course. To meet this expectation, a live video broadcast was hosted by the instructors, in reaction to which the participants’ elation and relief were obvious. Ross et al. comment that many students were wanting for an embodied, authoritative, and recognizable ‘teacherly moment’. This suggests that the presence of teachers in the course promotes students’ engagement.

Nkuyubwatsi (2013) suggests various ways in which students can be empowered and their self-confidence built up. For example, getting full scores in quizzes could encourage the less confident students to continue with their learning instead of dropping out. Also, study guides and assignment guides can be provided to support independent learning.

Table 2: Ways to Increase Participation

Measure	Benefit	Source
Multimedia (e.g. video lectures, audio files, infographics)	Arouses students' interest	Adamopoulos (2013), Conole (2013), Kellogg (2013)
Certificates or badges for completion of courses	Provides an incentive	Bremer (2012)
Live video broadcast	Satisfies students' need for recognizable evidence of the teachers' attention	Ross et al. (2014)
Adequate quizzes, study guides and assignments	Empowers and encourages students	Nkuyubwatsi (2013)

Interaction

Interaction plays a very important role, particularly in cMOOCs which emphasize social network learning and knowledge creation through interaction. Learners are encouraged to be autonomous and active to take charge of their learning, such as by commenting on others' views. Table 3 presents ways to enhance interaction.

Social media and online platforms have been widely used to create an engaging environment for interacting. For instance, discussion boards and chat rooms help to guide student conversations about the course materials (Goldberg et al., 2015), and to facilitate peer-to-peer interactions and discussion from students worldwide (Murray, 2013). Social networking sites and wikis allow students to build connections with each other and their instructors (Conole, 2013). Bremer (2012) observed that Twitter was the most important communication tool for course participants, beside the course blog. Web-based communication enables instructors to get involved in both one-on-one and group interactions (Kellogg, 2013). DeBoer et al. (2013) found that students who collaborated in their studies performed better than those who worked on their own. Also, Rollag (2010) states that the use of discussion boards may serve as a better means to accomplish the desired learning outcomes for students who do not feel comfortable talking to their instructors face-to-face.

Table 3: Ways to Enhance Interaction

Measure	Benefit	Source
Discussion boards, chat rooms	A platform for discussing teaching materials	Goldberg, Bell, King, O'Mara, McInerney, Robinson, & Vickers (2015), Murray (2013)
	Increases students' performance	DeBoer, Stump, Seaton, & Breslow (2013)
	Provides another means of interaction	Rollag (2010)
Social networking sites	Allow the building connections among students and teachers	Canole (2013), Bremer (2012)
Web-based communication programmes	Enables one-on-one interactions	Kellogg (2013)

Table 4 presents the issues and solutions on interaction. The use of online social media may lead to problems arising from the very large number of diverse students in MOOCs. According to Chen (2014), the huge number of students in MOOCs makes interaction between instructors and students very difficult. Students may also be overwhelmed by the volume of online resources and communication (Kop, 2011; Richter & Krishnamurthi, 2014). If there is a common knowledge base and educational background among MOOC learners, they would not benefit from the discussion (Chen, 2014).

It has been suggested that the presence of instructors in the online learning community may help to alleviate such problems (Richter & Krishnamurthi, 2014; Ross et al., 2014). Discussion boards need to be guided and monitored, otherwise they can easily be derailed into intense debates (Milligan, Littlejohn, & Margaryan, 2013; Schmidt & McCormick, 2013). Instructors can moderate online discussion to avoid tension and rudeness among students in unmediated and unguided discussion (Bali, 2014).

It is also important to maintain the liveliness of the learning community in MOOCs. Particularly for longer courses, few students remain active in online interaction over time (Rodriguez, 2012). Continuous feedback is thus important to encourage participation in the learning community. Sánchez-Vera, León-Urrutia, & Davis (2015) reported that a team of 10 facilitators was established for a Web Science MOOC, who read all students' comments in the forums and provided responses when needed, while letting students be the drivers of the conversations.

Some specific measures have also been recommended for promoting online interactions. For example, relevant discussion threads could be linked to the corresponding sections in a MOOC to help learners to identify easily the threads related to a specific course section (Nkuyubwatsi, 2013). In addition, new learners may encounter difficulties in navigating the online environment at the beginning of a course, and in this case peer support from experienced participants was found helpful (Waite, Mackness, Roberts, & Lovegrove, 2013).

It should be noted, however, that bringing learners together online and a learner-friendly course design might not guarantee interaction. The formation of learning groups is a challenge in MOOCs because of the massive number and wide range of students. Dron and Ostashewski (2015) point out that some elements in conventional learning groups do not exist in MOOCs. For instance, there are normally no leaders, well-established norms and rules of behaviour. The students are not likely to know each other, and there is often no facilitator to moderate interactions. Due to the very large number of students, it is hard for the teacher to provide responsive guidance. Also, as everyone can join and leave a group at any time, it is hard to build trust among learners. All these factors hinder interaction, collaboration and mutual support in learning. It has been suggested, therefore, that one needs to look 'be-yond traditional group methodologies in order to capitalize on the social advantage' (p. 58). According to the teachers' experience of EDCMOOC (Ross et al., 2014), emails were sent out about two months prior to the start of a course to invite learners to begin making connections with others and prepare for the group interaction in the course.

Some studies have been conducted to address the problems of group interaction in MOOCs. For example, Andersen et al. (2014) analysed and evaluated the nature of collaborative knowledge construction in the discussion forums of a MOOC, covering the actions needed to initiate and facilitate online learning. Following Salmon's Five-Stage model (5S) (Salmon, 2000), key features were identified. At the first stage, general issues, such as course structure and teacher roles, must be made clear so that students feel safe and secure when using the digital learning platform. At the second and third stages, students learn the use of the platform, such as navigating and sharing information, and are nurtured to show mutual respect, independence/self-confidence, and enthusiasm. At the final two stages, the students learn to interact collaboratively by responding to others' posts, giving higher levels of argumentation, constructive critiquing, and challenging others' ideas — and they develop the abilities of self-criticism, a high level of reasoning and reflection. Although MOOC

students may not follow these five stages exactly, Andersen et al. (2014) argue that there was a clear progression in showing deeper reflection and engagement in the course.

Table 4: Issues and Solutions Regarding Interaction

Issue	Solution	Source
Interactions limited by the enormous enrolments	—	Chen (2014), Richter & Krishnamurthi (2014), Kop (2011)
Students valued a strong instructor presence	Instructors to guide, monitor and mediate the discussion boards	Richter & Krishnamurthi, (2014), Ross et al. (2014)
Tension, rudeness, alienation, and intense debates in discussion boards		Bali (2014), Milligan, Littlejohn & Margaryan (2013), Schmidt & McCormick (2013)
Liveliness of learning communities	A team of facilitators to provide continuous feedback	Sánchez-Vera, León-Urrutia & Davis (2015)
Better course orientation	Linking discussion threads to corresponding course sections	Nkuyubwatsi (2013)
Difficulty in forming learning groups	Curtin Learning Commons Salmon's Five-Stage model	Dron & Ostashewski (2015) Andersen et al. (2014)

Another study by Dron and Ostashewski (2015) attempted to build a learning group following phases of first addressing general issues, and then creating a safe and comfortable environment to promote interactions, using the online platform 'Curtin Learning Commons'. For example, the online platform was set to give everyone a sense of control, allowing learners to post freely on it. A wide range of measures were used to support social connection, to help people get to know and trust each other, and to build networks with similar interests. Badges were awarded for learners' activities on the platform to recognize achievement and build a sense of trust.

These studies show that collaborative learning relies on a suitable online environment and students' readiness. It takes time and involves the use of suitable materials to form a learning group and develop interaction and collaborative learning.

Consolidation

Table 5 shows ways for enhancing consolidation of course contents. Assessments are important in learning as students have to reflect on, retrieve and apply their learning. Students can also receive feedback for understanding their study progress for improvement. Kulkarni, Bernstein and Klemmer (2015) found that rapid feedback on work in progress in massive classes improved students' learning performance. Yet, assessment is a big challenge for MOOCs, as detailed and timely feedback can hardly be done for the large number of students. In addition, the issue of online cheating has to be

Peer assessment has been common in MOOCs, involving students evaluating the work of their peers with the aid of rubrics or checklists (Sánchez-Vera, del Mar & Prendes-Espinosa, 2015). Machine grading is also used for closed questions and essays (Chen, 2014; Sandeen, 2013). In addition, some other methods have also been proposed, such as PeerStudio introduced by Kulkarni et al. (2015), in which all students are involved in providing rubric-based feedback on the submissions of their peers. Sánchez-Vera, del Mar and Prendes-Espinosa (2015) also proposed a mixed peer assessment approach combining the assessments by peers and experts. Through 'decentralizing' the work of marking from solely the teacher to different people, this balances the depth and efficiency of feedback in MOOCs.

Table 5: Ways to Enhance Consolidation

Measures	Benefits	Sources
Feedback from courseworks	Improves students' learning	Kulkarni, Bernstein, & Klemmer (2015)
Peer assessment	Alleviates the marking burden of MOOCs instructors	Kulkarni (2015), Sánchez-Vera, del Mar, & Prendes-Espinosa (2015)
Computer-graded questions		Sandeen (2013), Chen (2014)
Scale linking and score equating	Prevents cheating	Richter & Krishnamurthi (2014)
Exam centres, webcam proctoring and biometric authentication	Verify students' identity	Sandeen (2013), Chen (2014)

Authentication is important for the academic integrity of MOOCs. Advanced item analysis techniques have been used to prevent cheating, such as scale-linking and score-equating (Richter & Krishnamurthi, 2014). Other attempts have been made to verify the identity of students, for instance by offering proctored exams in physical exam centres, webcam proctoring and biometric authentication (Chen, 2014; Sandeen, 2013).

After Rolling Out the MOOC

After rolling out a MOOC, the course and students have to be monitored continuously to identify any issues for improving the course and its teaching. Learning analytic could be used to collect student data (Sánchez-Vera, del Mar, & Prendes-Espinosa, 2015). Kajimoto (2015) proposed several analyses that could be applied in every MOOC. For example, quantitative analysis could be performed to correlate students' demographic variables and their level of participation. The times and ways in which students viewed the video clips would reflect their learning. Qualitative analysis could be performed by tracking their written communication. Also, observation of the effectiveness of teaching materials for different students can be done to provide insights for improving teaching.

Identification of Factors from MOOCs

Based on the factors summarized from relevant studies, an empirical investigation was conducted to examine the extent to which the factors could be identified from the 32 MOOCs in the sample. The course pages of each MOOC were visited to check for the presence of the factors in the four stages, i.e. attraction, participation, interaction and consolidation.

Figure 1 shows the presence of factors related to attraction found in the courses. All the courses provided a detailed introduction for the students, in the form of text and/or video trailers. Most courses also had welcoming lectures.

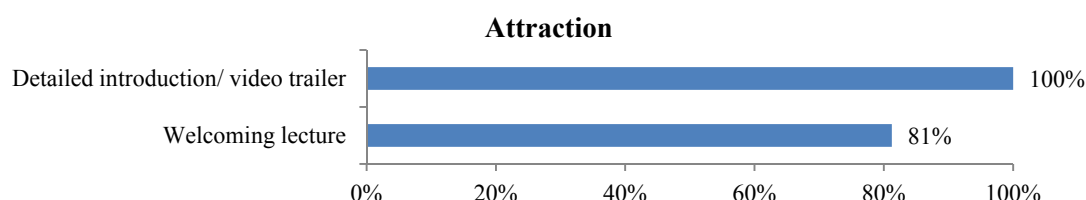
**Figure 1:** Presence of factors in the attraction stage

Figure 2 presents the presence of factors that promote learners' participation. Almost all courses provided multimedia learning materials, especially video lectures that may be regarded as an essential component of MOOCs. Only one course was found to have no video lectures, but it had some audio files. It is also common to have certificates or badges provided to recognize completion of the tasks in a course, and quizzes or assignments following video lectures. However, only one course was found that provided occasional live chat sessions with the instructor.

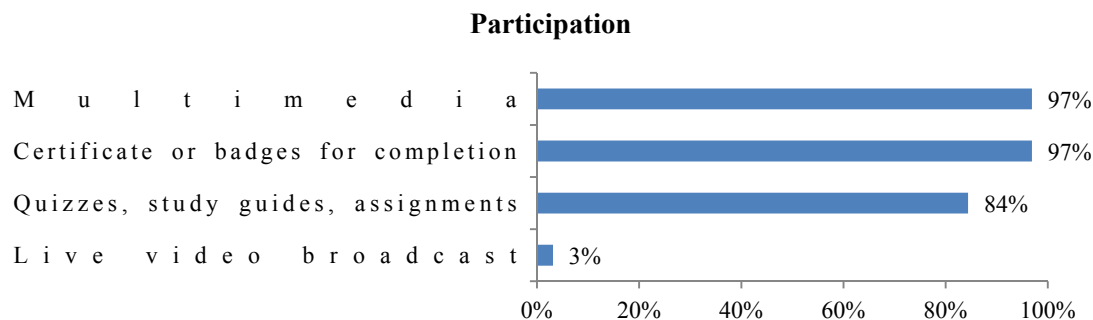


Figure 2: Presence of factors in the participation stage

Figure 3 shows the presence of factors for facilitating online interaction. Discussion boards were an essential element provided in all courses. Courses in OpenLearning included a browser-based communication tool which allowed real-time chat with instructors or other learners on the courses. The feature to link discussion threads to related course sections was limited by the design of the platform. It was offered in all courses of edX, FutureLearn and OpenLearning, but only some in Coursera. About half of the courses were found to have instructors involved in the online discussion; or a team of facilitators (called 'mentors', 'teaching staff' or 'community TA') responsible for answering students' enquiries and responding to students' posts, in order to keep the discussion active and updated.

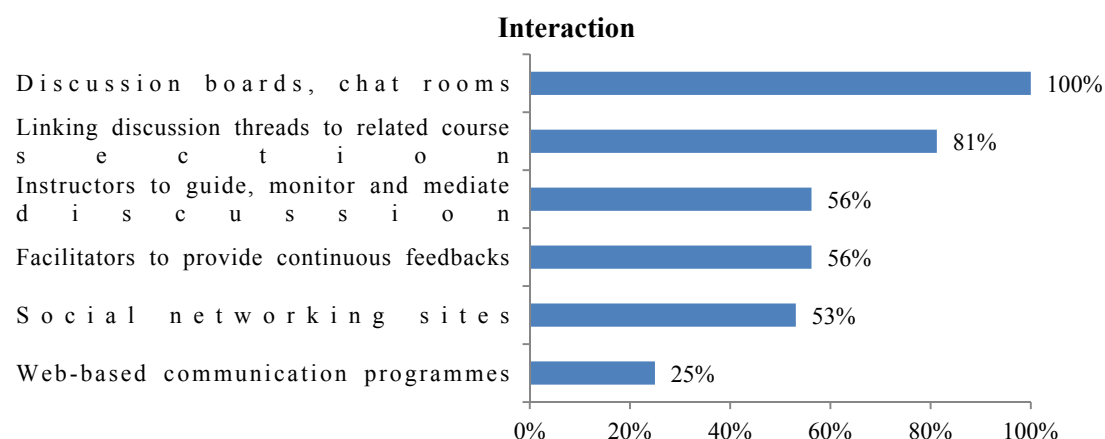


Figure 3: Presence of factors in the interaction stage

Figure 4 presents the presence of factors involving helping learners to consolidate their learning. Computer-graded questions were commonly found among all MOOCs. Coursera was the main platform that emphasizes peer assessment. MOOCs that offer examinations at designated centres were uncommon — only one course in FutureLearn was found to offer such a service.

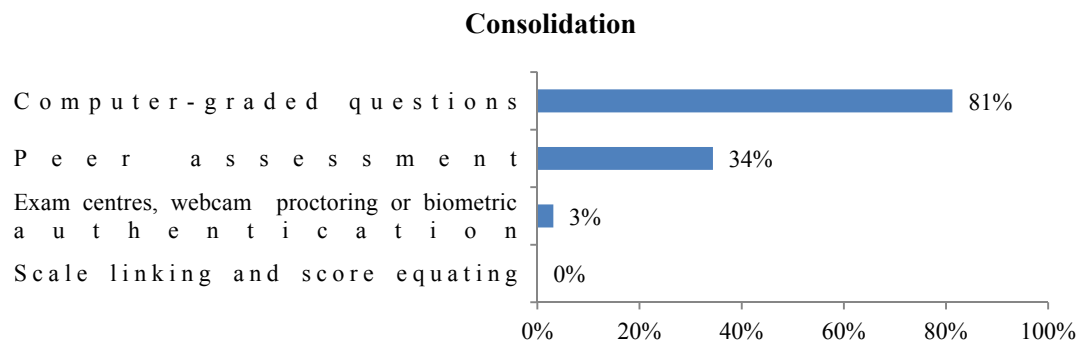


Figure 4: Presence of factors in the consolidation stage

Discussion and Summary

This paper has presented the factors from relevant literature leading to effective teaching of MOOCs, and their presence in MOOCs in practice. It contributes to our understanding of the differences between teaching conventional online courses and MOOCs; and the extent to which the ways and approaches proposed in the literature for the teaching of MOOCs were adopted by MOOC providers.

MOOCs are evolving, and so are their student profiles and teaching methods. The present findings do not impose any specific teaching strategy that must be used for effectiveness. The paper serves to raise attention to the MOOC context in four areas, to address some practical issues arising from the very large and diverse backgrounds of students that hinder effective teaching. Advances in information and communication technology, as well as openness, make it possible for MOOCs to attract enrolments from around the world. However, without innovations for teacher-student interactions, the concept of openness and desirable teaching and learning outcomes may not be achieved (Chiappe-Laverde et al., 2015). There is no shortcut to effective teaching of MOOC. It is a journey of exploration, experiment and reflection on different teaching strategies, course design and education technology.

It is worth noting that there is no evidence that the different features, or a lack of any features in course delivery, would lead to differences in teaching and learning effectiveness (Glance, Forsey, & Riley, 2013). Given the exploratory nature of this study, further work should be done, in particular on the proper adoption of these features in teaching, their effectiveness and ways of assessing such effectiveness.

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PREPARING FOR MOBILE LEARNING IN NURSING EDUCATION: PERSPECTIVES OF STUDENTS AND TEACHER

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Abstract

Mobile learning allows students to engage in interactive learning activities anytime and anywhere. It serves as a useful tool for nursing education, which involves the teaching and learning of conceptual knowledge and practical skills in different learning environments, such as classrooms, laboratories and clinical venues. This study examines the views and expectations of university students and their teacher in preparing for mobile learning on a nursing education course at the Open University of Hong Kong, which plans to expand its use of mobile learning to a broad range of aspects of its nursing programmes. Two focus groups were conducted with 20 student participants who had not practised mobile learning, and their teacher was also interviewed. They shared their experiences and opinions on learning and teaching, and their expectations for the features of mobile learning. The results illustrate the differences between students and the teacher in their behavioural patterns in learning and teaching. It was found that the students tended to study by themselves with little interaction with the teacher or collaboration with classmates. They expressed their need for supplementary references, such as a medical dictionary, and multimedia materials to help them to study difficult topics. The teacher noted the limitations of the learning management system, and the suitability and comprehensiveness of online materials. Suggestions were made on the features of a mobile app for class interaction and class administration, and how to integrate mobile learning into nursing education.

Introduction

Mobile learning has been playing an increasingly crucial role in education, allowing learning to take place beyond geographical barriers and time constraints. It supports learners studying ‘on the move’ to access learning materials within a specific context which provides cultural and environmental cues for understanding the information (Evans, 2008; Koole, 2009). It also promotes social interaction among learners and teachers through mobile applications such as text messaging or student response tools (ELI, 2010; Uzunboylu & Ozdamli, 2011).

Nursing education is one of the areas where mobile learning is highly desirable, as it emphasizes the acquisition of conceptual knowledge and practical skills in different learning contexts, such as the classroom, laboratory and clinical settings. The use of mobile devices in nursing education provides just-in-time information, and supports situated, experiential and contextualized learning (Kukulska-Hulme & Traxler, 2005).

This study focuses on the practice of mobile learning in nursing education at the Open University of Hong Kong (OUHK). The OUHK has been using mobile and wireless technologies for supporting clinical education since 2004 to remove the physical barriers associated with classroom learning (Lee & Tsang, 2006). Its nursing programmes have been making use of mobile devices in clinical practicums to help students to access the learning materials anywhere and anytime to complete their clinical

assessment. Based on the success of this experience, the University plans to extend mobile learning practice to the classroom setting of nursing courses. A mobile app is under development to provide features which enhance students' learning and class interaction, and to support class administration.

This paper presents the views and preferences of nursing students and their teacher on the design and implementation of mobile learning. As the users of the mobile app, their views are significant for the successful design and delivery of mobile learning (Baker, Dede & Evans, 2014). The findings of this study would help in the planning and implementation of mobile learning in a conventional classroom setting, for achieving a high level of learning and teaching effectiveness.

Literature Review

Related studies have suggested a wide range of factors to be taken into account in the design and implementation of mobile learning. For example, it has been found that students' positive attitudes towards the use of mobile devices may not result in actual usage (Garrett & Jackson, 2006; Kenny, Park, Van Neste-Kenny & Burton, 2010); and their usage of the mobile devices for learning decline continuously during the course of study (Vogel, Kennedy & Kwok, 2009). According to Li and Wang (2012), 'all such efforts and research are futile, or at least substantially discounted, if students are disengaged' (p. 1). Thus, the identification of factors that help students' engagement is of prime importance for the success of mobile learning.

The characteristics of mobile devices were found to be relevant for students' tendency to use them for learning. For example, Taleb and Sohrabi (2012) mentioned relevant factors such as ownership of a mobile phone with various capabilities; enduring battery power; and accessibility to the Internet. Also, Gikas and Grant (2013) observed that the small keyboard and complicated input mechanism of mobile devices have to be overcome to encourage students' use of mobile learning.

For promoting online interaction and collaboration, Gikas and Grant (2013) showed the use of synchronous and asynchronous communication tools in stimulating a high level of learner-learner interaction. Rambe and Bere (2013) found that students preferred mobile instant messaging to traditional classroom interaction because of its anonymity, flexibility and affordances for personal reflection. Also, Elias (2011) summarized eight principles for the instructional design of mobile learning, where community support for learning can be promoted through providing multiple channels of mobile communication and grouping learners according to their technological preferences.

Teachers play a key role in facilitating student engagement in mobile learning, as they serve as the students' mentors and are involved in the course design (Alrasheedi, Capretz & Raza, 2015; Gikas & Grant, 2013). Teachers' readiness and their capability to provide technical assistance are therefore crucial (Li & Wang, 2012). Alrasheedi et al. (2015) noted that teachers have to acquire adequate computing skills to fully utilize mobile learning in teaching so as to create a positive atmosphere. Cheon, Sangno, Crooks and Song (2012) and Abu-Al-Aish (2014) found teachers' attitudes to be an important factor affecting students' adoption of mobile learning, as they would be discouraged when they perceived that their teachers were reluctant to apply, or lacked the required skills to embrace, mobile technologies.

Nursing education emphasizes equipping students with competencies covering their ability, knowledge, skills and attitude in different areas (HKNC, 2012); and it involves a variety of settings, such as the lecture, laboratory and clinical placements (Chan, 2002). Nursing students and teaching staff have diverse needs in terms of the device, content and application that help to inform the mobile learning delivery.

Research Method

This study aimed to collect and analyse the views and suggestions of a group of nursing students and their teacher on different aspects of mobile learning. The participants included 20 year-2 undergraduate nursing students from a course named “Health Assessment”, who were recruited using convenience sampling and had not practised mobile learning, as well as the teacher on the course. Two focus group interviews and an individual interview were conducted in November 2014, to collect feedback from the students and the teacher respectively. Written consent was sought from all participants prior to the interviews.

The interviews were structured according to the FRAME model (Koole, 2009), which proposes that effective mobile learning is the outcome of an ideal integration of the device (D), learner (L) and social (S) aspects of learning. The interactions of these aspects, namely, device usability (DL), interaction learning (LS) and social technology (DS), contain the attributes that belong to two aspects. Device usability is about how the functionalities of a mobile device enable learners to engage in cognitive tasks and how the device affects learners’ psychological satisfaction. The interaction learning synthesizes learning and instructional theories, and emphasizing social constructivism involves three types of interaction — learner-content, learner-teacher and learner-learner. Social technology addresses how mobile devices support communication and collaboration among individuals and systems (ibid.). The FRAME model has been adopted widely in relevant studies (e.g., Kenny et al., 2010, 2012; Parscal, Sherman, Heitner & Lucas, 2012), serving as a foundation for developing effective learning materials and teaching and learning strategies for mobile education. The interview data was transcribed, coded, and the key themes according to the FRAME model were identified. Selected quotes from the participants were translated into English and shown in the section below.

Findings

The students’ and teacher’s responses are presented below, following the aspects of the FRAME model.

Device Usability

Portability

The students regarded portability as a consideration for the choice of mobile devices for learning. They indicated their preference for a smaller size of device, which they could carry anywhere. Particularly in the practicum context, a device with a larger screen is not suitable for use. As noted by student ‘Ra’:

It depends on where you are going to use them. It is really inconvenient to use iPad in a ward.

Student ‘He’ further noted the inconvenience of using iPad at the practicum context:

Even if you are able to put it in your pocket, you would not do so. The staff [at the clinical venue] would criticise you if they find you using a mobile device during ward time.

The use of mobile devices enables students to store electronic learning materials on the devices and removes the inconvenience of carrying heavy printed textbooks when attending classes. This increases the flexibility of students’ schedules, as they can participate in other activities before or after classes, without the burden of carrying books. Student ‘N’ stated that:

You would not want to carry a thick textbook around with you. But with an e-book, you can store it in your mobile phone or tablet and go anywhere with it.

Student 'Ch' indicated his use of different textbook versions at different contexts:

It is difficult to bring a hardcopy textbook if you got something else to do besides attending class. In this case I would bring an iPad with the e-textbook pre-stored. But at home, I would use the hardcopy.

Information Availability

A mobile device can store information sources, such as textbooks, lecture materials, students' notes and videos, which allows students to collect and access the information anywhere and anytime. Student 'Ho' stated:

Some students would use their iPads to download [lecture notes]. It is quite convenient as we can jot notes directly onto the device.

For the learning materials, concerns were raised that the nursing videos on the clinical procedures for health assessment need to be regularly updated to include the most recent procedures. The teacher addressed this issue, explaining the budget problems with frequent updates and the difficulty in finding performers. She said:

Because health assessment involves privacy issues, such as laying bare a performer's bosom and arms, it is difficult to find performers and it is much more costly [than hiring ordinary performers]. After the videos are filmed, frequent updates are still needed to follow the changes of practice in the real clinical setting.

Sourcing the videos from the Internet is not comprehensive, and most of them are not suitable for undergraduate studies and the local context in Hong Kong. The teacher said:

Not all relevant videos can be found online. Some videos contradict the textbook materials and contain errors. Some are too difficult, and may be provided for doctors in practice or postgraduate students. Students often get confused when searching for videos online by themselves.

Psychological Comfort

The use of mobile devices can reduce students' effort in locating information. Student 'N' indicated that the search function is important for him for learning. He stated:

When you search for some terms or words [in the textbook], you just press a button [on the device] and you can see where they appear in the whole book.

Satisfaction

Some students, who were still using printed materials, despite having the electronic version stored in their mobile devices, indicated the limitation of the device for effective reading and note-taking. Student 'Ng' noted that:

I would still take notes on paper, because I cannot do two things at the same time on the device. I have to open an app to read the e-textbook and another app to take notes. Even if I can manage to use both apps together, the display on the device would be too small.

Thus, a larger screen size, despite being less portable, would be convenient for students, especially for reading. Student 'Ri' stated that he used mobile phone for reading because he has no other options:

The screen size of a mobile phone is really small. I use it for reading only when I have no other options. So usually I would study at home, using the PC with a larger screen.

Interaction Learning

Learner-content Interaction

Uncertainty about the reliability of Internet sources is one of the major issues when students search for learning content online. As Student ‘He’ stated:

The problem is that I am not sure if the sources are reliable. Because everyone can upload a video on YouTube, even if the contents contain doubtful ideas. I view only those I feel are reliable, but I don’t know whether they are really so. This is our concern.

The teacher responded to this issue by providing links to relevant reliable YouTube sources to students.

Learner-teacher Interaction

Students tend to ask the teacher questions individually face-to-face or through emails. Student ‘He’ raised this issue:

It depends on the length of the question. Sometimes when I feel I cannot elaborate my question well through email, I ask the teacher face-to-face individually. Or I ask it before or after a lab session.

Student ‘Ho’ said that he felt more comfortable in asking the teacher questions after reviewing the materials after class, and so he preferred sending emails. He stated:

Before reviewing the materials, you don’t know what to ask. Sometimes you know what you do not understand only after reviewing the materials at home. In that case, I would send emails [to ask the teacher].

The teacher, however, stated that she seldom uses emails to communicate with students, as she has found that they rarely check their mailboxes. Instead, she usually uses the course learning management system for disseminating information and materials. For responding to individual questions, she would contact the students separately on the phone. She also utilizes text messaging tools, such as WhatsApp or SMS, if the students did not answer the phone. She stated:

I would post what everyone needs to know on the OLE (i.e. the learning management system). If [the problem] is not related to everyone, I would call the students on the phone ... I would first try to use the telephone, and send an SMS if they did not pick it up.

Learner-learner Interaction

The students would share learning materials among themselves online. Student ‘N’ noted that:

We usually share the resources. For instance, the practical examination of 103 (i.e. the course Fundamental Nursing Practice) requires students to perform certain skills in health assessment. We would share the steps of assessment to let our peers know how to perform them.

Social Technology

The students utilized social media for information-sharing and skills exchange. Student ‘He’ noted:

We have a Facebook group to share learning materials. I believe that there are similar groups in other courses.

They also used messaging tools to facilitate communication for group projects. As student ‘N’ said:

After discussing face-to-face, we will work on different parts of a group project. If we have any questions, we would use WhatsApp [to communicate], and we usually use its audio recording feature [to send out voice messages].

The teacher pointed out the network problem which may limit the effectiveness of in-class activities using the mobile app, mentioning experience of failure in using a mobile polling system in class due to the network problem. She said:

The network connection was not that good at the time. It wasted a lot of time and students were discontented with that, as I could not finish all the course materials on time.

Desired Features of the Mobile App

Learning Tool

Additional features of the mobile app were suggested by the students and teacher. Learning tool, such as medical dictionary, is one of them. Student ‘Y’ noted:

I would like to see the availability of a medical dictionary that we can use to search for information about diseases. The lecture notes do not include sufficient detail for us to have a clear idea about the exact symptoms of a disease. We need to search for them online, and there is often too much information and complications. It would be great if there was an app we can use to easily search for the relevant information.

Multimedia Materials

The students indicated a wish to see the learning contents presented using videos or animations. Student ‘Ho’ said:

When I do revision, I always try to visualize the content. I think it is good to have animations illustrating the aetiology of certain diseases.

Student ‘Ho’ also suggested using multimedia materials to present the difficult concepts, such as the electrocardiography (ECG) rhythm. It would facilitate interpretation. He said:

There are many variations in ECG rhythm, and the variations can be tricky. If the rhythm can be presented using the multimedia technology, it would facilitate my interpretation.

Online Forum

The teacher recommended setting up an online forum which can be accessed through the mobile app to enhance social interaction. The forum can also allow the teacher to identify students’ learning difficulties. She noted:

To increase discussion and interaction with peers, we could set up an online forum. I could post questions on the forum, with students being required to spend some time looking at the questions and providing feedback. I could also see through students’ feedback if there are any problems that have to be resolved.

Student Response System

The teacher also suggested a student response system providing Q&A or exercise functions for in-class activities. This feature can potentially facilitate in-class interaction between students and the teacher, which could be challenging in a conventional lecture setting with a large number of students. The teacher could identify students' mistakes and identify common pitfalls through the Q&A and exercises, and provide suggestions to students individually or address the problems during the class. She said:

[By introducing this feature,] I would not only talk in class. Students could do practice and revisions using the app. I could know the performance of students on the exercises, and respond to them promptly. I could provide suggestions for their learning or share the suggestions in class.

The Q&A function can help students to concentrate on lectures, as she noted:

The in-class Q&A can help students stay focused, as they have to do the exercise on the app. It is impossible for it to be done by neighbouring peers, as everyone has to work with their own device.

In addition, the Q&A function can serve as an attendance marking tool for class administration. As noted by the teacher:

I could tell if you attended the lecture the moment you respond to the Q&A. Besides, this can also motivate students to come to class, as we have a minimum attendance requirement.

Discussion

The students emphasized their wish to have more learning materials provided on the mobile app. They indicated their preference for accessing the materials in an electronic version for mobility, which highlights the importance of device portability in considering the various learning contexts of nursing students. However, some students still valued the better readability of printed materials, which is consistent with the findings of relevant studies (Woody, Daniel & Baker, 2010). This suggests the need to design the instructional contents of mobile learning app which can allow learners to save their thoughts, questions or notes immediately during their interaction with mobile devices; and the attention to effective display of information on mobile devices that may impact learning in terms of recall and reconstruct of information (Sanchez & Goolsbee, 2010).

While there are many relevant materials on the Internet, their suitability and reliability is a concern for the students. The learning materials suggested by the students are mostly supplementary for promoting understanding. Relevant support may be offered through the mobile app to help students select appropriate online learning materials for their needs.

In their responses, the students did not focus on social interaction for learning. They tended to ask the teacher questions individually, and use social media mainly for sharing materials and instant messaging for completing group assignments. The concept of the FRAME model (Koole, 2009) that learning could be enhanced through mobile social interaction and collaboration was not clearly observed from the students' responses. On the other hand, the teacher acknowledged the potential of mobile technologies to facilitate class interaction, and planned to include this element in the practice of mobile learning. It appears that there is a potential gap in the expectations of mobile learning for social interaction between the students and the teacher. Further communication between the two parties would be helpful in achieving a mutual agreement of mobile learning (Wang, Shen, Novak & Pan, 2009).

Conclusion

This paper has presented the views and expectations of students and their teacher on the practice of mobile learning. The findings suggest that the needs of these two parties for mobile learning features may be different. While the students put greater emphasis on the provision of quality learning materials, the teacher focused on the potential of mobile technologies for facilitating class interaction and administration. For a university preparing for the delivery of mobile learning, this possible gap has to be bridged to ensure that what is provided fits the needs of both user groups, so that they are more ready and willing to engage in mobile learning.

This study also has implications for advancing the theoretical foundations of mobile learning. Despite related models and frameworks indicating the general considerations, they have yet to adequately address the variation of different user groups and subject areas. Further work on this aspect would be helpful for informing delivery of mobile learning that, as this study has suggested, is context- and subject-dependent in nature.

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CULTURAL CONSIDERATIONS FOR ONLINE LEARNING: TRANSNATIONAL FACULTY PERSPECTIVES

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Abstract

This study investigated how faculty (university academics) from three different cultural and linguistic backgrounds perceive their own cultural context and the impact of this context and cultural factors on online learning. For this empirical study, 30 faculty from three countries, Sri Lanka, Pakistan and Mauritius engaged in a six-week professional development online course on tutoring and mentoring conducted by the Open University of Sri Lanka (OUSL). The course was facilitated by OUSL faculty and e-mentors from the USA. The views of faculty participants were gathered through an online questionnaire which was specially designed based on two main cultural frameworks; Hofstede's 4-dimension cultural model and Hall's contextual framework to determine their applicability to the South Asian cultural context. Further, transcript analysis of asynchronous forum posts by the participants was used to triangulate the data. Hofstede's power distance, individualism-collectivism and masculine-feminine dimensions and Hall's contextual dimension: high-low context, emerged as applicable to the context of this study. All participants from Pakistan and the majority of Sri Lankans (88%) stated that their countries exhibit signs of high power distance. In contrast, only 25% from Mauritius confirmed their agreement on higher-power distance. The majority of Sri Lankans and Pakistanis indicated that their cultures are more collectivist while only 25% of the participants from Mauritius confirmed that their country was a collectivist country. The majority of Pakistanis and Sri Lankans felt that their cultures were feminine. However, Uncertainty Avoidance was less predominant in this research study. The majority of the participants indicated that they show respect for their teachers by addressing teachers with their titles and they communicate differently with a person with a title. In general, while a majority of participants would challenge the ideas of their peers; they would rarely challenge the ideas of their teachers. Participants indicated that their students would prefer structured online courses and would need more direction and guidance from their teachers. This study was based on a small sample of participants from several specific ethnic origins and therefore, cannot be generalized unless studies with larger samples are conducted. However, the findings have implications for accounting for culture in online learning design for South Asian students.

Introduction

Rapid developments in Information and Communication Technology (ICT) allow learners to access information and provide greater flexibility to engage in education irrespective of their physical location to gradually develop their full potential as learners. Institutions of higher education also have the advantage of securing eminent professionals across countries, either for designing and/or for delivering courses and to offer transnational programmes to any learner in the world.

Given this context, the Sri Lankan government realized the importance of online learning as a solution for limited higher education opportunities in the country and took the initiative of providing infrastructure facilities and training academic staff under the Distance Education Modernization Project (DEMP), Ministry of Higher Education in Sri Lanka. A series of professional development workshops in online tutoring and mentoring were conducted. The aim of these workshops was to

develop the capacity of faculty and other professionals who would be responsible for designing and delivering online programmes through the National Online Distance Education Service (NODES). Initially, these workshops were conducted in a blended format with four face-to-face sessions which were spread across six weeks where most of the activities were online.

Recognizing the need for training online tutors and mentors with the increasing demand for online learning in the country, the Open University of Sri Lanka (OUSL) sought permission and obtained the ownership of the tutor mentor training programme from the Ministry of Higher Education and started conducting these capacity building workshops after the project period. This training programme comprised of 14 modules to train online tutors and mentors including synchronous and asynchronous discussions, e-activities, quizzes, group projects, and peer evaluations was updated and offered to the participants in this study. The course was facilitated by OUSL faculty and e-mentors from the USA.

Objectives of the Study

The objective of this study was to investigate how faculty (academics) from three different cultural and linguistic backgrounds, Sri Lanka, Pakistan and Mauritius perceive their own cultural context and the impact of this context and cultural factors on online learning.

Research Questions

The following research questions were formulated to address the above objective:

- What are the participants' views on their own cultural context based on Hofstede's and Hall's cultural dimensions?
- How does the cultural context and cultural factors influence online learning?

Significance of the Study

With the advent of Massive Open Online Courses (MOOCs) that are offered transnationally, it is important to understand the cultural factors that impact online learning. Very few research studies have investigated cultural issues in online education from the perspective of South Asian Learners.

Al-Harthi (2014) has stressed the importance of conducting empirical research studies on impact of cross-cultural learning as she had found that many culture related studies were descriptive case studies reporting experiences. Therefore, the findings of this study provide some insights on cultural factors influencing South Asian learners in an online context.

Literature Review

Generally, culture plays an important role in the way people behave in all activities including the way people teach and learn. These cultural differences are mainly observed within countries and even within sub-groups of ethnic groups. These cultural differences are observable through all the levels in communication such as verbals (words, and language itself), non verbals (body language, gestures) and custom practices (clothing, gift-giving, protocols) when dealing with people in that particular culture. In traditional settings these differences could be explicitly observable whereas in a virtual world many culturally diverse people communicate using technology and build "learning cultures" (Goodfellow and Lamy, 2009) and the differences are not clearly visible. According to Goodfellow and Lamy (2009), cultural differences may be mitigated in online education through the "cultural negotiation" of the online participants. Jung and Gunawardena (2014) pointed out ways in which culture impacts online learning and the need to think of cultures formed online by interacting diverse

participants or “ideocultures” that impact the learning transaction. However, it is also important to understand how perceptions of one’s own culture will also impact how learners will behave online. Previous studies that have examined culture and online learning have utilized Hofstede’s (1986) and Hall’s (1976, 1983) dimensional frameworks to understand culture. However, the applicability of these frameworks for the South Asian context has not been determined. Therefore, this study used Hofstede’s and Hall’s framework to understand the South Asian perspectives on culture.

Hofstede (1986) proposed a framework based on his cultural dimensions theory for cross-cultural communication where he describes the effects of a society’s culture on the value of its members, and how these values relate to the behavior of individuals. His initial framework proposed 4 primary dimensions; Power distance (PDI) – strength of social hierarchy, individualism-collectivism, uncertainty avoidance (UAI) and masculinity-femininity (task orientation versus person orientation). Later on he added two more dimensions to his original framework in two subsequent time frames; long-term orientation (LTO) and indulgence versus self-restraint. However, there have been several criticisms of the validity and limitations of Hofstede’s frameworks (Ailon, 2008; McSweeney, 2002) indicating that it lacked the theoretical foundation and an appropriate sample of participants representing national cultures. Subsequently, Hofstede (2002) addressed some of these critics and criticisms. Since Hofstede’s 4-dimension cultural model has been widely used and generally accepted as the most comprehensive framework for cross-cultural research studies, this research study also used this model to determine its applicability among three countries; Sri Lanka, Pakistan and Mauritius. One reason that Hofstede’s model was applicable to this research context is because he addressed the relationship between teachers and students.

Hall’s (1976, 1983) conceptualization of high context and low context communication styles, and implied indirect and direct communication styles, was useful for analyzing cultural differences in communication in the context of this study. In the South Asian cultures, context is important to understanding a message and its connotations. Many adopt indirect communication styles in face-to-face communication. Therefore, Hall’s conceptualization helps to analyze perceptions of communication styles and how they impact interaction face-to-face and online.

Table 1: Hofstede’s 4-dimension Cultural Model (Liu et al 2010, 178)

Dimensions	Descriptions
Power Distance (PD)	The degree to which people accept the unequal distribution of power and wealth in a society. In countries with high PD, individuals with high social status exert great power and influence (Gunawardena et al., 2001)
Individualism - collectivism	The tendency of members of a society to act as individuals or members of groups, and to which a culture values individual versus collective achievement or well-being (Mercado, Parboteeah, & Zhao, 2004).
Uncertainty Avoidance (UA)	The degree to which the individuals of a culture feel threatened by uncertain or unknown situations. Individuals from a culture with high UA are uneasy with unstructured ideas and situations. (Hofstede, 1986).
Masculinity-femininity	The degree to which the society prefers distinct gender roles. (Hofstede, 1986; Mercado, Parboteeah, & Zhao, 2004).

Methodology

This research study was designed as an exploratory mixed methods study utilizing descriptive analysis of an online survey and qualitative analysis of computer transcripts in order to understand cultural conceptualizations from the perspective of three different participant groups (Sri Lankan, Pakistani and Mauritian) and how these conceptualizations would impact online learning in a South Asian cultural context. This research study focused only on cultural dimension of learning thus restricted to the module on culture of this programme.

Research Design and Sample

The views related to culture were gathered through the responses to online questionnaires and referring to the transcripts of forum discussion in this particular module. The questionnaire was designed to capture the main elements of culture based on Hofstede's 4-dimension cultural model and Hall's framework. Therefore this study used a mix method using quantitative and qualitative approaches and triangulation was used to validate the results.

Results and Discussion

Profile of Respondents

There were 30 professionals registered for this online programme; 9 from Pakistan, 10 from Mauritius and 11 from Sri Lanka. They were mostly academics from national universities. In this sample 17 were females. Age ranged between 25 years to above 60 years, and the majority were in 25-29 years age group. Only 10 were successful in completing this programme; one certified as a master trainer and the remaining 9 were certified as online tutors. Out of these 10 successful completers, eight were females including the master trainer. Only 15 completed the online questionnaire. Thus, the response rate for the questionnaire was 50%.

Cultural Dimensions based on Hofstede's 4-dimension Cultural Model

According to the results obtained using the online questionnaire, all the participants from Pakistan (100%) and the majority of Sri Lankans (88%) had the opinion that their countries exhibit high power distance where they believe that there is unequal distribution of power. In contrast, only 25% Mauritians confirmed their agreement on high power distance. This indicates that there is more equal distribution of power in the Mauritian culture and therefore it would be possible to design a more collaborative learning environment.

Transcripts data in the asynchronous forums, illuminated the actual situation of high power distance in the Sri Lankan culture as exemplified below:

I was thinking of the aspect of power distance mentioned in your list, and thought of it in relation to that found in Sri Lankan society, don't you think that it is still plays a dominant part in most institutions? In fact, some professors, and senior lecturers would be quite offended if students and junior staff do not use their titles. So though we have moved away from our traditional culture in some aspects, I feel that power distance is strongly entrenched in our society (SF1).

In addition, all the Sri Lankans and 75% Mauritians felt their students are less likely to challenge the ideas of their teachers. In contrast only 33% Pakistanis were in agreement. On the one hand, a similar finding was reported by Biggs and Watkins (1996), stating that students are not encouraged to question or challenge a teacher's knowledge in Eastern countries and teachers have absolute authority. On the other hand, in Western education, to challenge a teacher or tutor is seen as part of the self-development process as dialogue and interaction are encouraged in the learning process (Robinson, 1999).

The majority of Sri Lankans (75%) and Pakistanis (67%) indicated that their cultures are collectivists cultures where the people share and aim for group goals rather than working individually. Contrastingly, only 25% of the participants from Mauritius had the view that their country is a collectivists country.

The following quotation from one Sri Lankan supports the view that Sri Lanka is a collectivist country, however she feels that it is slowly heading towards an individualistic society.

It is true that Sri Lanka is a collectivist country but I observe this is becoming less during past decades and we step forward towards individualistic society with weak relations among others. However we still have collectivists culture in our families. Before 1970's we had a strong collectivistic culture, where people were connected through strong and cohesive groups. As a consequence the society was safe. There the elders, weak and disable people were cared by such social structure. As an example, in earlier villages at North central province, the middle part of "chena" is for widows of that village - (SF2).

This quotation was from one of the participants from Pakistan.

... since the time is moving and we have entered into technological world, the values are also changing with the changing world. lots of innovations have come into our culture, for example; our national dress is shalwar and qameez, but now jeans with qameez/kurta is going to be common in young girls; so we are also catching the germs of other cultures also - (PF1).

Both these quotations confirmed that culture never remains static and is dynamic and the use of new technologies may influence and accelerates the process of this transformation for better or worse.

In contrast, Mauritians seem to be more liberal in their thinking and the following quotation clearly illustrates the "openness" and "freedom" experienced by the people in Mauritius:

Mauritian culture is based on the diversity of the population, that's why there is no "official religion" in Mauritius. Hindus, Tamils, Muslims, Christians, Buddhists and others from all over the globe live in harmony and respect the free practice of all religions in Mauritius. The ancestral melting-pot that is Mauritian culture allows different faith communities to cohabit in mutual respect. Mauritius is an island of temples, churches and mosques – MM1.

When the data were analysed with regard to uncertainty avoidance, 63% Sri Lankans felt that people in the country are able to function well in ambiguous /uncertain environments. However, only 50% of Mauritians and 33% of Pakistanis were in agreement on this dimension.

A clear demarcation was observed in the fourth dimension of the framework; masculinity – femininity across these three countries. All the Pakistanis and 63% of Sri Lankans felt that their country is a feminine culture whereas Mauritians were split (50%). However, only 33% Pakistanis felt that women in their country have more opportunity to hold higher positions in an organization even though they believed that their country is a feminine culture. In contrast, 88% Sri Lankans felt that there are opportunities for females to hold higher positions whereas only 25% of Mauritians agreed that higher positions are available for females.

According to Hofstede's index, both Sri Lanka and Pakistan are considered as collectivistic societies. This means that both Sri Lanka and Pakistan show similar cultural patterns, on this dimension exhibiting the preference for family, values and taking collective responsibilities for others. However, Pakistan with a very low scores of 14, is comparatively more collectivistic than Sri Lanka and tend to display long-term commitment to the member 'group', be that a family, extended family, or extended relationships and everyone takes responsibility for fellow members of their group. However, it was not possible to carry out comparisons and draw any conclusion with respect to Mauritius due to unavailability of data on Mauritius in the Hofstede's index.

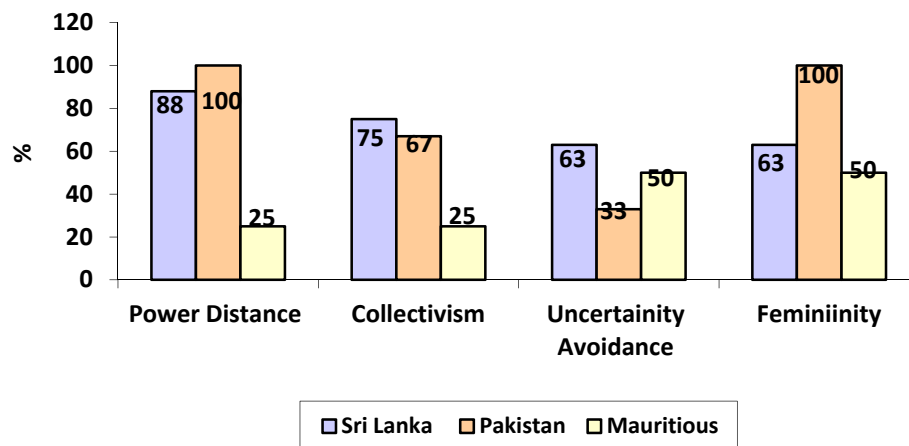


Figure 1: Perceptions on Hofstede's 4-dimension cultural model – Sri Lanka, Pakistan and Mauritius

This finding supports the results of the earlier studies which have been reported that the tendencies of collectivism, uncertainty avoidance and the high power distance were observed in online learning environments in Eastern cultures (Kim and Bonk, 2002; Ku and Lohr, 2003, Wang, 2007).

Cultural Dimensions based on Hall's Framework

When data were analysed according to Hall's framework with regard to high-low context dimension, 100% Pakistanis and 75% Sri Lankans felt that their country is a high context society where it is necessary to know the context to understand the message rather than directly communicate the message in words like in low context cultures. In this instance only half of Mauritians were in agreement that their culture is a high context culture.

Sri Lankans seem to be more generous in sharing both ideas and resources with others (75% in both instances) followed by Mauritians; 75% preferred to share ideas and only 50% were willing to share resources. In contrast, 67% Pakistanis felt that their people were keen to share resources than sharing ideas (33%).

Eighty eight percent Sri Lankans, 75% Mauritians and 67% Pakistanis stated that the people in their countries have a flexible and fluid attitude toward time and they take it easy when it comes to meeting deadlines. In sum, Sri Lankans seem to be the most relaxed country with respect to time.

Influence in Culture on Online Communication

All the participants across these three countries felt that their students will show respect for their teachers by addressing teachers with their titles and they firmly believe that knowing a person title will impact the type of communication that they may have with him/her. However, 100% Mauritians felt that online communication will breakdown power barriers that exist in society but Sri Lankans (88%) and Pakistanis (67%) were less affirmative.

Nevertheless, the majority of the participants from Mauritius (75%) and Sri Lanka (63%) felt that the power difference between teachers and learners may influence the way they participate and engage in online interactions whereas only 33% of Pakistanis were in agreement.

Influence in Culture for Designing of Online Courses

The majority (75% Mauritians, 67% Pakistanis and 62% Sri Lankans) were in agreement that their students will not adapt to an unstructured online courses. Even Ku and Lohr (2003) found that Chinese and Taiwanese students felt uncomfortable with the nonlinear nature of their online courses. Furthermore, the observations of this current study were in agreement with Hofstede's (1986) results, and reconfirmed that not only in Eastern Asian countries but also the individuals in South Asian countries were uneasy with unstructured ideas and situations and showed signs of high uncertainty avoidance even though there was no clear demarcation when the participants were asked directly about this dimension.

All the participants from Sri Lanka and Mauritius and 67% from Pakistan felt that people who communicate online should provide the context so that the learners can easily understand the message implying the importance of integrating context to understand the message communicated in online courses.

Seventy five percent of both Sri Lankans and Mauritians and 67% Pakistanis agreed that it is easier to communicate via text in an online discussion forum in a high-context society. However, 67% Pakistanis and 63% Sri Lankans felt that they may not encounter any misunderstandings with respect to indirect communication patterns, indicating that they are quite used to extracting the meaning from indirect messages. Definite conclusions could not be reached from the results from Mauritius (50%).

The majority of participants (100% Pakistanis and Mauritians and 88% Sri Lankans) confirmed that students in collectivists cultures are more likely to work together on group projects online. Thus, incorporation of group projects into online courses may benefit participants in their learning process.

Participants had different opinions with respect to gender and online communication and 100% Mauritians and 67% Pakistanis believed that differences in gender will not have drastic impact whereas Sri Lankans were gender neutral.

There was an interesting observation where Sri Lankans were less likely to challenge ideas of their peers (88%) to maintain harmony in an online environment while Pakistanis (33%) and Mauritians (25%) were more open. Sri Lankans felt that disagreements are generally taken at the personal level rather than at the level of ideas. This observation was less evident in other two countries (50% Mauritians and 33% Pakistanis). According to a study conducted by Thompson and Ku (2005), Chinese students were found to be less critical and opinionated in online discussions than their U.S. peers and unwilling to post messages that conflict with the instructor's view (Zhao and McDougall, 2008).

Impact of English Language in Online Courses from the Perspective of Second Language Learners

Almost all felt that people in their countries tend to be more tolerant of misunderstandings caused by mistakes in English language made by those who are not proficient in the language (100% Pakistanis and Mauritians, 88% Sri Lankans). One Sri Lankan was not in agreement and further analysis revealed that he is an English teacher. Individual differences were also identified as there were two English teachers both Sri Lankans and while one was not in agreement, the other was more tolerant about the mistakes in English language.

Language barriers for non-native speakers tend to detract from equal participation in computer conferences (Gunawardena et al., 2001) and tend to magnify other cultural problems when attempting to complete a Web-based course (Ku and Lohr, 2003) as written communication was the dominant form of communication. Language, which mediates an individual's ways of thinking and speaking, is an important cross-cultural variable that is often neglected in existing cultural frameworks.

Impact of Culture on Knowledge Construction using Ideas and Learning Resources

All Mauritians believed that they are more likely to build on each others ideas to construct knowledge rather than put forth their ideas for others to build on them in an online environment. In contrast, Pakistanis (67%) and Sri Lankans (63%) felt that they were equally contributing and at the same time building knowledge on each other's posts.

Further, all the Pakistanis and 75% Sri Lankans and Mauritians felt that their students are more likely to support collaborative team spirit in an online learning environment. When engaging in online group tasks, all of the Pakistanis and Mauritians felt that ability to see how other groups are performing and competing between groups will increase their motivation while only 88% Sri Lankans agreed with this view.

When the participants were asked about the deadlines given for online assignments, 100% Mauritians, 88% Sri Lankans and only 33% Pakistanis indicated that, their students are more likely to find excuses for not completing them on time.

Conclusion

Findings revealed that there were both similarities and differences across these three cultures and also some disparities within the same culture. Similar cultural patterns were observed in the majority of Sri Lankans and Pakistanis when they agreed that their cultures exhibit characteristics of high power distance, collectivism and feminine values. Interestingly the majority of Mauritians regard their culture as a low-power distance and more individualistic. Mauritians were split on whether their culture was masculine or a feminine culture.

With respect to the low-high context dimension a similar observation was made. Whereas Sri Lankans and Pakistanis reported similar patterns and felt that they belong to a high context society (100% Pakistanis and 75% Sri Lankans). Mauritians were equally split between the low and high context dimension. This may be due to the blending of different cultures from its long history in Mauritius, mainly influenced by the French and English with "no official religion". Mauritians may be more open and liberal with their cultural values due to the association with many cultural, ethnic and religious groups over centuries unlike in Sri Lanka and Pakistan where religion plays a very important role in the lives of people.

These findings indicate that Mauritian culture made up of great diversity in the population may not fit neatly within the Hofstede and Hall's dimensions of cultural variability. This may also be the reason that there is no national index attributed to Mauritius in Hofstede's index. It would be interesting to conduct more in-depth study with a larger sample in Mauritius to determine how a diverse population conceptualize its cultural and identity and how this would influence communication in the online context.

Even though ICT can converge participants in a virtual environment permitting greater flexibility in offering transnational programmes, it is still crucial to examine the cultural frameworks and expectations students and teachers bring with them in order to build inclusive online learning communities and facilitate knowledge construction. Therefore, the findings of this study reflect that understanding individual cultures and their behaviours will help instructional designers and academics design authentic and online courses considering the cultural propensities associated with specific cultures and languages.

While the results of this study cannot be generalized because of the small sample size, it points to the need to understand a learner's culture more thoroughly and sheds light on the limited existing knowledge on cultural influences on learning.

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REFLECTIONS ON THE FIRST EXPERIENCE OF OFFERING ONLINE COURSE THROUGH CROSS-CULTURAL E-MENTORING

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Abstract

This research paper will discuss the initial experiences and the challenges faced by the faculty of the Open University of Sri Lanka (OUSL) in offering its first transnational online programme to the faculty members of three different countries; Sri Lanka, Pakistan and Mauritius. This online programme was the updated and transformed version of the earlier Online Tutoring and Mentoring Programme offered under the Distance Education Modernization Project (DEMP), Ministry of Higher Education in Sri Lanka and was delivered entirely online unlike the earlier blended programme. The Ministry took the initiative of providing higher education opportunities through online learning as a remedial measure to address the issue of limited access to higher education and these capacity building workshops were conducted to train the academics and professionals of higher education institutes during the period of 2007-2009. The current programme was facilitated by OUSL faculty and e-mentors from the USA. For this empirical study, 30 participants; 9 from Pakistan, 10 from Mauritius and 11 from Sri Lanka engaged in a six-week professional development online programme. Out of which 17 were females. The methodology used for this study was a mixed approach; using mid and final evaluation questionnaires as quantitative methods, and students and staff reflections as qualitative methods. Triangulation of quantitative and qualitative data was carried out to increase the validity of the results. The findings revealed that there were many challenges; organizational, technological and pedagogical aspects in particular and provide recommendations to combat similar challenges when offering transnational online courses.

Introduction

Having identified the importance of e-learning as a solution for limited higher education opportunities in the country, a series of professional development workshops in online tutoring and mentoring were conducted under the Distance Education Modernization Project (DEMP) of the Ministry of Higher Education in Sri Lanka. The aim of these workshops was to develop the capacity of faculty and other professionals who would be responsible for designing and delivering online programmes through the National Online Distance Education Service (NODES). Initially, these workshops were conducted in a blended format with four days as face-to-face which were spread across six weeks where most of the activities were online. Initial face-to-face sessions were conducted in two days as a preliminary induction session and provided hands-on training for the participants to get familiarize with the online environment. Next face-to-face session was in the middle to assess the progress and to introduce remaining e-activities. Final face-to-face session was at the end to complete the remaining modules and to get feedback on the programme. The purpose of having these periodic face-to-face sessions was to take the participants gradually from a teacher centred to a student centred approach enabling them to go through a smooth transition of a paradigm shift from face-to-face to online.

Recognizing the need for training online tutors and mentors with the increasing demand for online learning in the country, the Open University of Sri Lanka (OUSL) sought permission and obtained the ownership of the tutor mentor training programme from the Ministry of Higher Education to conduct these programs after the project period. Later, the training programme was updated and transformed by the Centre for Educational Technology and Media (CETMe) of OUSL and delivered as a transnational online programme to the participants in this study.

The original programme was based on the WISCOM Instructional Design model (wisdom communities) based on socio-constructivist and sociocultural learning philosophies and distance education principles for the development of online communities (Gunawardena et al, 2006) and the model was retained in this exclusively online course. Screen casts have been used in the current online programme to help the learner to log-into the programme and the layout of the online course which were covered in the induction face-face session in the original programme.

This programme comprised of 14 modules with asynchronous and synchronous discussions, e-activities, quizzes, group projects, and peer evaluations. The programme was facilitated by OUSL faculty and e-mentors from the USA. Having gone through the course, only 10 were successful in completing the course; one certified as a master trainer and the remaining 9 were certified as online tutors.

Objectives of the Study

The objective of this study was to find out the views and challenges faced by

- the academics of the OUSL in administering the first transnational programme of the OUSL and
- the participants when they engage in a transnational programme through cross-cultural e-mentoring.

Research Questions

The following research questions were addressed in this study:

- What are the challenges faced by the faculty in administering a transnational programme through cross-cultural e-mentoring?
- What are the challenges faced by the participants in engaging in a transnational programme through cross-cultural e-mentoring?

Significance of the Study

Rapid developments in Information and Communication Technology (ICT) led the institutions in the world to attract eminent professionals across countries, either for designing and/or for delivering courses and offer as transnational programmes to any learner in the world using new technologies and tools. However, very few research have been conducted in this area and reporting the initial experience of conducting this type of transnational online programmes will provide some insights and strategies for the potential personnel who would like to offer transnational programmes through cross-cultural e-mentoring.

Methodology

This research study used mixed methods utilizing descriptive analysis of mid and final questionnaires and qualitative analysis of the reflective journals of the participants to capture their experience in engaging in a transnational online course. In addition, reflections of the three academics of the OUSL who were the OUSL mentors of this programme were used to gather data with respect to the challenges faced by them in administering the first transnational programme through e-mentors from the USA.

Reflective practice, reflexivity and first person inquiry are widely used in research at present in order to understand the process of learning through and from experience towards gaining new insights of self and/or practice (Boud et al 1985; Boyd and Fales, 1983; Mezirow, 1981, Jarvis, 1992). Therefore, this study used reflective practices of both participants and faculty so that they critically evaluate their own responses to practice situations.

Research Design and Sample

The reflections of the participants and the academics of the OUSL were used as qualitative data and the data analysis was carried out using content analysis to identify the main themes. Participants views for the mid and final evaluation questionnaires were triangulated with the qualitative data to validate the results. Therefore, this study used a mix method using quantitative and qualitative approaches and triangulation was used to validate the results.

Results and Discussion

Profile of Respondents

There were 30 professional enrolled for this online professional development programme; 9 from Pakistan, 10 from Mauritius and 11 from Sri Lanka. They were mostly academics from national universities in their respective countries. In this sample 17 were females. Age ranged between 25 years to above 60 years, and the majority were in 25-29 years age group. Only 10 were successful in completing this programme; one certified as a master trainer and the remaining 9 were certified as online tutors. Out of these 10 successful completers, eight were females including the master trainer. 15 responded for the mid term evaluation and only 13 responded for the final survey. Thus, the response rate for the mid questionnaire was 50% and 43% for the final questionnaire.

Learning Experience by the Participants and the OUSL Faculty

This section reports on the findings of the participants with respect to their learning experiences in various aspects of this programme and they were triangulated with the reflections of the OUSL faculty.

- ***Pedagogical Aspects***

All the participants were satisfied with the Instructional design of the course, content of the course and the support that they received from the OUSL faculty irrespective of the challenges faced at different stages of the programme.

I would say all. The content helped me to expand my knowledge of what online learning entails, the role of mentors and what we need to support learners in an online environment. The challenges and obstacles faced, helped me to understand things from the student's perspective, as well as gain insight and understanding on how to handle issues and problems as a tutor in the online environment (SF1).

Instructional Design of the programme - All the participants who responded to the questionnaire indicated that they have achieved the learning outcomes of this training programme (46% strongly agreed). Further analysis revealed that the course syllabus was very clear to get the overall picture of the course (100%), sufficient examples were integrated into the programme to illustrate concepts or issues (100%), learning experiences were presented in a well structured format (100%), learning activities were useful in comprehending the course content (100%) and instructions were very clear in all assignments (100%). Almost all the participants have used the readings and learning resources in the forum posts (92%) implying that the learning resources were appropriate and useful in knowledge construction.

I like the use of three orientation modes of each module i.e. Purpose of the course, tutor's message and the learning challenge. Instead of mixing up all three in one document it is a nice way of explaining expected outcomes and experiences designed in each module (Mid Evaluation questionnaire - PF2).

Even though the original blended programme was transformed to an exclusively online programme, the duration of the training programme was kept for six weeks. Since all the modules were relevant and appropriate, the content of all the modules was kept unchanged. However, some of the web resources were replaced due to the unavailability of the original resources. Additional learning resources such as screen casts, study guides and guidelines for chat sessions were prepared to replace the four face-to-face sessions in the original training programme.

Only 54% stated that they kept up with the workload and most of the reflections clearly showed the difficulty that they faced during this course with respect to the workload.

I think the work load is high. It was difficult to manage 3 modules in one week with other commitments in work place and home (SF2).

Reflections of the OUSL academics also revealed that they also felt the difficulty and had rearranged some of the original modules while delivering the course, mixing modules with demanding tasks with the modules with less demanding tasks to balance the workload. But still most of the participants did not participate in a timely manner and they had to reschedule activities most of the time. Therefore, the actual time period (seven weeks) was longer than the expected time period.

Knowledge construction through collaborative learning - According to the questionnaire data, the training facilitators provided ample opportunity for participants to ask questions in the discussion forums and Help Wanted/Help Given Forum (100%), responded promptly to the questions and concerns raised by participants (100%), used activities and exercises that helped us think of ways to apply our learning to online tutoring and course design (100%) and encouraged to participate in the online course (100%). Participants felt that the facilitators demonstrated a high level of expertise throughout the training (100%).

All the participants felt that the local e-mentor encouraged the group to work collaboratively to achieve the group goal (100%), acknowledged their contributions to the group task (100%), able to manage discussions among a group of learners in another cultural context (100%), encouraged the group to value other points of view (100%) and showed how to conduct an interactive learning experience online (100%). However, some commented that they would have received more support from international e-mentors.

All the participants felt that the online comments they received by other participants helped them learn (100%) and experienced a sense of togetherness with other learners in this course (92%). However, the majority commented that everybody in their group did not participate and support the group task.

It is not easy to produce a group work in online as some students pay less attention to the target and do what they want even under good online background. Some are not collaborative and aim mostly their individual targets. Some are difficult to negotiate (Final evaluation - SF2).

The OUSL faculty and most of the participants noted that some of the participants were not so concern about the plagiarism and was directly copying the content from the Internet and it was clearly highlighted from the following quotation:

Our e-mentoring sessions were not very useful in getting a true sense of online collaboration. Only a handful of group members brought original thinking to the activities. Most were content with copying something directly from the web. Rather than collaborating, it was a task of gluing together individual write-ups (or content pilfered from the web) (SM1).

This may be that participants did not have adequate time to rephrase the content or may not know the actual gravity of the issue.

- **Technical Aspects**

Reflections from the OUSL faculty on the transition from a blended course to a transnational course as follows:

The 'course backup' file handed over by the DEMP had to be reloaded to the NODES; checking all the links, updating or re-linking certain resources, creating new resources and activities while adapting the programme to an exclusively online version. The extreme slowness in accessing the programme via a server housed in a national site with limited controls for the OUSL web administrator caused many challenges and frustrations for the OUSL faculty. Hence, the time taken to transfer and modify the content took more time than anticipated.

The situation was exacerbated with the breakdown of the NODES server just one day prior to the commencement of this online programme. Fortunately, one of the OUSL faculty members had the access rights to the original programme where it was originally offered by the DEMP. Hence, a prompt decision was taken after consulting the university authorities to offer this programme using the OUSL server which was only dedicated for the online course development and in-house training. However, direct reloading of the course backup from the NODES server to the OUSL server was not technically feasible due to the incompatibility of the two installed versions of the LMS. Therefore, OUSL faculty had to copy the content of each module and fix the links in all web resources while undergoing several interruptions. Copying of the programme was feasible at the last minute as the sole responsibility of administering the local server was managed by the one of the OUSL faculty in the CETMe. Hence the course team; three faculty members and one technical assistant were given the course creation rights immediately. Confronting all these technical challenges, course team managed to develop the 'Pre course activities' and the first module of the programme which were assigned for the first week, and launched the programme on time. One of the factors that contributed for the launching of the programme on time was that the three academic staff members were very conversant with the LMS and they had the necessary technical skills so that they managed to find alternative methods and strategies to overcome technical failures. Many studies have reported that the successful offering of online courses depend on the technical role of the online teachers (Berge, 1995, Anderson et.al 2001, Aydin 2005, Varvel, 2007).

Connectivity was a source of concern for both the participants and for the faculty. One of the OUSL faculty members related her experience as follows:

Accessing the local server was more flexible than NODES as lesser number of users were accessing the site. User profiles for students were created and the login credentials were emailed on time. Team spirit was at a maximum in getting back the course. Everybody was supportive, flexible and enthusiastic in offering the first international online course, while reminding of the famous English expression 'when the going gets tough, the tough get going'- OUSL faculty 2.

Andersson (2008) has also found the connectivity or the access issue as a major challenge for e-learning in Sri Lanka, in a case study carried out on the eBIT programme in Sri Lanka. Not only in Sri Lanka, online access seemed to be a major challenge in developing countries such as Pakistan and Mauritius too. This was quite apparent during chat sessions of the programme as participants from Pakistan and Mauritius reported frequent interruptions due to power failure, poor band width or internet connections. The following quotation from a participant from Pakistan clearly illustrates the difficulty.

The only thing which frustrated me was discontinuation of power supply when I was at the verge of submitted anything created with so much effort. This probably is our national problem and nothing to do with this course. It can be a food for thought for the facilitators to develop some strategy for such issue for online teaching with such issues. (Mid term questionnaire –PFI).

Gulati (2008) also reported similar challenges faced by developing countries when attempting to make learning more accessible by using Internet technologies. Hence these issues point out that expanding online education in developing countries still not fully successful, possibly due to the governments' and institutions' failure to recognize and address access issues pertaining to online learning, although it has the potential to meet the educational needs of the masses.

- **Organizational Aspects**

Online registration - Since OUSL had successfully implemented online registration with an online course before, same procedure was used in this programme. Promotion was mainly through the OUSL web. The advertisement indicated for the interested personnel to register online using a form and payments using the online payment gate way. However, online payment gate way was not functioning as expected and it was brought to the notice by a potential candidate. Immediate measure of paying the course fee to the bank and sending the scanned receipt to the institution via email was introduced. These technical matters also attended by the OUSL faculty with frequent communication with two divisions; IT and Finance and with potential students. This online payment facility was available only for local students. Payments for international participants were borne by their respective institution through standard bank transactions. As this was the first time that the OUSL embarked on offering transnational online courses, the mechanisms for online registration and payments were not established and streamlined. However, experiencing this type of difficulties before commencement of the programme may have a negative impact on the institution.

Administration issues related to prior registration – As stated earlier, the mechanism for online registration was not streamlined and automated and had to contact the web administrator regularly to check the online subscriptions. In addition, individual messages were sent to the potential candidates who have subscribed online and for those who have sent messages to the course email account.

Constant communication had to be made with potential candidates especially with country coordinators of international candidates, clarifying their queries regarding course enrollment. All these administrative functions were carried out by the lead local e-mentor as there were no established mechanisms to liaise with international participants including their registration and payments unlike in standard degree programmes at the OUSL. Therefore, the lead e-mentor had to carry out all these administrative functions while attending to the programme modification and e-mentoring which was quite challenging.

Administration issues during the course – Although nominations were received on time and participants were given clear instructions to register before a said date, some international participants registered at different time intervals in the first week. Therefore, the deadlines had to be extended in order to accommodate late registrants to engage in pre-course activities and to familiarize with the online course and with other participants. This affected the smooth flow of the course as it was structured to offer in a weekly basis. Local participants have already completed their week activities and some were not so happy about this experience. That was envisaged in the final evaluation questionnaire and also in their reflections. One student reported his unhappiness as follows:

The running of the course was chaotic. This was due to the reason that new entrants were admitted to the course even after its commencement. This lead to the dissimilar deadlines and confused some participants – SMI

Constant communication was carried out using email messages (personal and group), weekly course announcements and forum discussions in order to encourage participants, requesting them to regularly participate in forum discussions and complete e-activities assigned per week.

Liaising with cross cultural e-mentors was also carried out through email messages indicating when to participate in the discussion as they were involved only in the e-mentoring module which was scheduled for week 3,4 and 5. Owing to the time difference between Sri Lanka and USA, the communication was not that easy; and sometimes the responses from the e-mentors were delayed. Thus, the OUSL faculty had to send emails to e-mentors requesting them to participate in the forum discussions. Same procedure was used with the international participants from Pakistan and Mauritius.

Organizational support - When the participants were questioned about the organizational support they received from their respective institution, 69% of the participants indicated that they received adequate support from their organizations to complete this training programme and 76% felt that their organization values their participation in this programme.

Since this was the first experience of offering a transnational course in the OUSL, many initiatives had to be taken. The OUSL faculty had to take timely decisions with regard to technical and administrative issues while carrying out academic work and it was a very demanding exercise. Some of the issues were brought to the notice of the relevant authorities without much success. As such they felt they would have received more support from the institution. Ettinger, Holton and Blass, (2005), reported that the organizational support as one of the critical factor in the success of e-learning. As Taylor (1998), pointed out that the ‘lone rangers’ of many universities who are individual practitioners developing innovative online teaching and learning products and innovations remain at the level of specific course offerings, due to a lack of institutional support and a failure to institutionalise inventive practice. Even, Hough, McNaught and Schaik, (1998) stressed that the people within these structures systematically resist attempts to alter their routines and their control over specific tasks.

Conclusion

Reflections of both the participants and the faculty showed the challenges faced by both parties when engaging in a transnational programme and how it affected on participant satisfaction. The main challenges were technical issues related to technology, connectivity and regular power failure experienced in developing countries. Limited peer engagement, plagiarism, workload and delayed responses from the cross-cultural e-metros were the main issues related to pedagogical aspects of the course. Lack of support structures in the institution were the main hindrances faced by the faculty in delivering this programme.

Therefore, formulating procedures and guidelines, establishing policies related to transnational programmes, providing adequate support structures to 'lone learners' and freeing them from administrative and technical tasks are essential if to deliver transnational programmes successfully.

In summary, the recommendations raised in this study provide valuable information and insights that can be used to assist distance educators and policy makers when delivering similar transnational online programmes in the future.

This study was based on a small sample size of participants from several specific ethnic origins. Therefore generalizations of the results in this study should be exercised with caution and should be used as an indicative study.

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COLLABORATIVE PROBLEM-SOLVING STRATEGY OF M-LEARNING IN OPEN UNIVERSITY OF CHINA

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Abstract

After an overview of previous research on the issue of collaborative problem-solving of M-learning in open universities at home and abroad, this study constructed a preliminary framework for learner's strategies of collaborative problem-solving in M-learning, and developed corresponding online courses in light of the Learning Activity Management System. Specifically, this study conducted a design-based research and carried out three series of experiment to establish a set of learner's strategies of collaborative problem-solving in M-learning, with a combination approach of questionnaire and in-length interview. The objective of this study is to provide both theoretical and practical implications for learners' collaborative problem-solving strategies in M-learning of open universities. This study suggested that learner's strategies of collaborative problem-solving might be constructed by focusing on different stages of problem-solving process, in terms of three aspects, namely, instructors, collaborative learners and learning resources. In the context-creating stage, the problem of poor configuration in online collaboration could be solved by employing the "recent developments" theory. In the problem-presenting stage, it is necessary for instructors to provide part of learning materials and guide the learners to utilise frames in collaborative analysis of problems. In the problem-solving stage, it is emphasized that learners are supposed to collaborate within and between groups, and multiple solutions to the problem under concern from different perspectives are greatly encouraged. In addition, it is suggested that the diversity of assessment mechanism be built for sharing intellectual insight and leaning outcome, and mentors shoulder the responsibility of guiding learners to transform what they have learned into real practice. Meanwhile, the addition of "pre-school preparation" section could facilitate the learners' problems, such as information trek and target deviation, in their collaborative problem-solving learning process.

Key Terms: *M-learning; collaborative learning; problem solving; strategy*

Problems with Learning Model of Distance Learning

In traditional model of distance learning, students are still passive and lecturing is the main teaching method based on information technology, without timely guidance for learners' independent thinking. For instance, the Open University of China (thereafter, OUC), the author's institution of affiliation, is a public distance learning and research university. The university awards undergraduate and postgraduate degrees, as well as non-degree qualifications such as diplomas and certificates or continuing education units. The pedagogical instruction involves three stages: explanation stage, recording stage and assessment stage, which are carried out over and over again. This process would make students suffer from great fatigue and impede their progress, which would be manifested in three aspects.

Passive Study and Lack of Motivation

Learning is a process of accumulation. OUC is characteristic of off-line-teaching-oriented teaching activity, supplemented by on-line instruction. Due to the government of traditional classroom way of teaching, the main body of education remain to be teaching staff, rather than students. Consequently, the students could hardly participate in group discussion over content, but only to accept what has been taught. It would turn out to be a mechanical process for learners to merely follow the instruction, without critical thinking or great interest in further study, leaving them great difficulties in understanding and memorizing knowledge deeply.

Lack of Independent Thinking

In the process of distance learning, the teachers' former teaching experience would promote their explanation of new knowledge to some degree. However, it is the previous traditional experience that restricts those staff's innovation in terms of pedagogy in classroom. Owing to the fixed model based on the application of mass media, all students can do is to follow the teachers' thinking pattern and to write and recite constantly, which is responsible for the current situation where students cannot think by themselves. Ever worse, they would fail to extend what they have learned to real practice to solve problems, and do not know how to learn without instruction.

Lack of Ability to Practice

The assessment method of OUC has always been the mode of examination for thirty years, which is the main standard to test students' knowledge. In order to improve their marks, learners only recite and memorize the knowledge point in class. This repetitive learning task is only helpful for testing, but worthless for learners' overall development. This kind of learning task would leave students full of theoretical knowledge, but lack of ability to practice.

Characteristics and Advantages of M-learning Platform

Development of M-learning

As one of distance learning models, M-learning can solve temporal and spatial barriers, and provide more learning materials for learners to make their own options for study plan, and individual learning. Furthermore, the notion of M-learning is informed from life-long study based on human real experience in daily life. However, previous research has a great debate over the role of M-learning. Some believe that M-learning is currently an extension and enrichment of classroom teaching in school education, expanding new field of knowledge. Other scholars predict that M-learning would be the tendency of human learning in the future, and even would replace the traditional school teaching with on-line learning. According to Docto, an authoritative educational technologist from Ireland, M-learning would be the major way of distance education in the future, and he classifies distance learning into three stages: distance learning, E-learning and M-learning.

As the statistics provided by Ministry of industry show, the number of China Mobile users amounts to 1.235 billion till the January of 2014, an increase of 10.8% compared to that of last year. 3G users take up 33.94% of the totality (0.419 billion) and there are 0.838 billion Mobile Internet access users. Up to date the amount of Mobile users has taken up 90.8% of the whole national population. In the January of the year 2014, there were 73.56 billion text messages sent by China mobile users, and 132633TB data were consumed through Mobile Internet. Therefore, it can be obviously observed that there is great need of people to grasp information of various kind and mobile portable devices are increasingly popular nowadays.

Recently M-learning has been mainly applied to informal learning beyond colleges and universities, company training and school education at home and abroad, and is even managed to be employed in classroom teaching at the elementary stage. In these cases, M-learning is the most effective informal learning mode beyond the context of school education.

Characteristics and Advantages of M-learning Platform

OUC has begun to establish M-learning platform and develop experiment projects since 2014, and twenty courses in three different disciplines have been taken to be the first piloting program. In the process of the establishment, the utilized Moodle Platform facilitates the presentation of adaptive content through multi terminals. Learners could make use of mobile phones or other handheld devices to surf the Internet for seeking information, watching audio materials, and learning knowledge as they

wish anywhere, anytime. In other words, the Moodle Platform could meet the demand of learners by providing great variety of M-learning experiences. In the process of project implementation seven provincial branches have been selected as pilot unit, in order to carry out M-learning activities. Based on the notion of construction, experiment and exploration, this research is focused on M-learning models, with a view to promoting the innovation of tutoring strategies, and developing the establishment of effective M-learning platform in terms of the construction of software and hardware of mobile devices, the resource design and delivery method, based on the analysis of research data.

1. **Portable Mobile terminal in wide use**

M-learning APP applications of OUC could run within mobile terminals such as smart phones and PAD handheld computers, and in this respect, mobile devices are indispensable tools for distance learners. Their small size and portability are of great significance to M-learning, for this quality makes learners no longer subject to spatial restrictions, but facilitates them in learning with smart phones anywhere. As a result, the employment of mobile devices to learning is of great feasibility.

2. **Offering personalized service and learning style**

There are a great variety of program resources in M-learning APP applications of OUC, and customers can download what they need according to their preference. Furthermore, OUC students register separately for individual modules under the guidance of reminder in homepage, which is to their benefit in effective time management for study. Additionally, learning materials include electronic textbooks and written books as needed, which offers students different options of learning style.

3. **Supporting audio, video and other multimedia file storage and playback**

OUC M-learning APP applications are compatible with mobile terminals such as smart phones, which possess play function like computers, and provide considerable video materials for learners to click.

The Construction of Effective Learning Model Based on M-Learning Platform

OUC has carried out M-learning in pilot units, offering students a comprehensive and sophisticated learning supportive service, and improved teaching quality and students' learning efficiency. In this sense, M-learning applied in OPU suggests a new way of training. How to construct effective learning model based on M-learning network is a most important stage of E-learning platform development.

By observing students' learning process, we have noticed that learners would find it difficult in solving problems collaboratively and efficiently, when they are exposed to complicated network environment. For instance, the situation of questions not linked to knowledge, the difference in learners' presenting problems to be solved for lack of effective tool for description, and deviation between teachers and students in collaborative discussion over certain subjects, all of which impede solving problems efficiently. What's more, learners would spend more time in selecting and matching quality information because of low rate of sharing resources and of large amount of information through M-learning terminals. Additionally, the awareness of collaborative learning by use of M-learning devices is not so full enough that students are passive in both intra-group and inter-group discussion. In consequence, learners cannot obtain timely assistance in on-line study, resulting in failure of on-line collaboration and problem-solving.

In order to deal with the issues mentioned above, this research provides some suggestions for facilitating collaboration and problem-solving of M-learning, with an aim at offering a reference to mobile learners. **First**, strategies of learning guidance should involve various factors in collaborative problem-solving activities, such as teachers, students, resources and environment. Furthermore, it would be more helpful if learning strategies proposed by scholars are specific and concrete, rather than general and abstract, and the strategies are supposed to accord with different

factors related to learning activities. **Second**, the theory of Zone of Proximal Development from Vygotsky should be employed to design the difficulty of problems to be solved in collaborative learning. Generally speaking, the problems should be of moderate difficulty and easy to carry out with feasibility after creative and critical thinking. **Third**, group is the main body of collaborative learning for solving problems. To be specific, instructors provide some learning materials to stimulate students thinking about certain issues within context, and students would collaborate in groups through discussion, question, analysis, communication and presentation. **Fourth**, the process of collaborative problem-solving should be carried out in different stages, from different perspectives. In light of the concept of integration, problems are decomposed into different stages according to their complexity, in order to encourage students' independent thinking from different points of views. **Fifth**, combination of various assessment methods is preferred to form benign competition mechanism within and between groups. In this way different opinions are conflicted and integrated, and finally crystalized into a common acceptable solution to the problems under concern. **Sixth**, teachers should be acted the role of cognitive trainers in providing guidance for the learners. In other words, teachers participate in the whole process of collaborative problem-solving, to guide the students to keep on track, to transform the problems into small feasible issues for students to handle, and help them to target the focus of the problem.

Conclusions

In the information age an increase of social requirements for talents reflects a basic need for people's capacity of collaborative problem-solving and project development. And the collaborative problem-solving learning model, based on M-learning platform, realizes the possibility of meeting this demand. This paper aims to provide theoretical and practical reference to the construction of M-learning system, by adopting a tentative framework of OUC collaborative problem-solving strategy of M-Learning. However, M-learning itself is still under research, and there remain some limitations in terms of universalizing M-learning context in the whole society, which need further exploration. As with the new MOOC on-line learning, the research of M-learning is still in exploratory stage at present, and there is a long way to go.

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LEVERAGING OF AFRICA'S DEMOGRAPHIC DIVIDEND THROUGH ODL TECHNOLOGY-DRIVEN HIGHER EDUCATION DELIVERY PLATFORMS

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Abstract

This paper explore ways in which the advances in Open and Distance Learning (ODL) technologies can be leveraged on to address the challenges of higher education provision in African countries. A number of these countries, it is argued are experiencing increasing demand for limited higher education places while at the same time having less and less resources available to them to meet these demands. The paper argued that the predicted demographic dividend where the share of the working age population (SWAP) of African countries compare to the rest of the world is projected to be on an upwards trend will present Africa with a number of opportunities and challenges. The paper present a view that through the deployment of ODL technologies, African countries could expand and improve access to quality and affordable higher education to meet the current shortfall in higher education provision and to as well as leverage on the opportunities of the demographic dividend to equip their working age population (WAP) with the needed skills and expertise to transform their economies in the technological age.

1.0 Introduction

The world economy is experiencing the effects of rapid globalization and liberalization as well as the impact of the emerging information age. The prediction is that this information age will bring about a new global economic order to be dominated by information and knowledge-based economies. African countries are facing new challenges to their socio-economic development process as a result of this globalization process and the impact of the emerging new information age. The majority of these countries are already experiencing a number of socio-economic challenges characterized by: low growth rates, balance of payment difficulties, the consequences of weak industrial structures and poor infrastructural development, not forgetting the problem of heavy debt burdens as well as problems associated with meeting huge public and social expenditure budgets. Many African countries in addition are struggling with issues relating to limited access to education and training, and inadequate resources to finance education at various levels of their educational system.

These no doubt that, African countries do face a number of developmental bottlenecks including challenges relating to funding their educational system to deliver on the needed skilled and educated workforce to support their socio-economic development in the information and knowledge age characterize by the emerging technologies [1]. The development of human resources, it can be argued is key to economic development of any nation. African nations although normally classified as underdeveloped, have huge untapped human resources which can easily be developed through expanding and improving access to quality education and training. It is being argued that deployment of ODL technologies and educational delivery platforms, can lead to the broadening access to higher education in a number of these African countries.

With the available modern technologies, including ODL delivery technologies, learning at a distance is no longer a problem as it once was. For example, it is now possible that, irrespective of location, students can use these technologies to access quality and affordable educational resources from hundreds of miles away. As a force contributing to social and economic development, ODL is fast becoming an accepted and indispensable part of the mainstream of educational systems in both developed and developing countries, with particular emphasis for the latter [2]. Particularly within the context Africa, these emerging ODL educational technologies apart from providing African educational institutions with an opportunity to educate a greater number of its people, these

technologies are also providing them with the opportunity to leverage of the *demographic dividend* that African countries are predicted to experience in the coming years to address the continent's human resource development challenges to fuel its development in the technological age.

2.0 The Changing Landscape of Education Delivering in the Technological Age

The unprecedented rapid growth in information and communication technologies (ICTs) including the global communications and educational technologies are revolutionizing the way we live, work and learn. These emerging technologies are rapidly removing the traditional barriers of *time* and *distance* that until now hinders the transfer of information, skills, knowledge and expertise from one place to another. Computer-mediated communications and multimedia educational technologies are making high quality educational programs easier to design, develop and deliver than was possible before. It is now possible that, irrespective of location, students/learners can use these technologies to access educational resources from anywhere in the world [3].

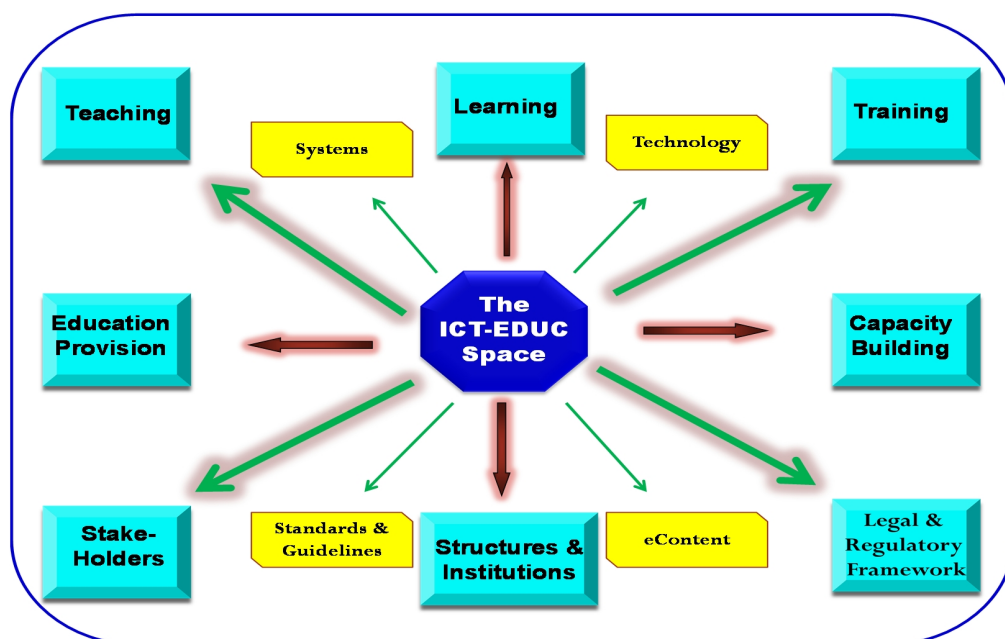


Figure 1: The ICT-Education Space

The relevance of ICTs for supporting education and training at all levels of the educational system has acquired new dimensions and greater urgency in a number of countries including those of Africa. The use of these technologies to support teaching, learning and the administration of the educational delivery processes and systems is fundamentally changing the educational delivery at all levels of the educational system in a number of countries. It can be argued that the resultant emerging *ICT-Education* delivery space as illustrated in Figure 1 above, encompasses various issues relating to teaching, learning and training; as well as issues relating to the various technological offerings and systems; educational and technological standards; appropriate delivery and organizational structures and institutions; and regulatory issues. The interplay between these issues and systems are important considerations that need to be taken into account in examining the changing landscape of education provision and delivery in the technological age.

3.0 Elements of ODL Delivery Technologies and Systems

Traditionally, distance education (DE) can be defined as education in which teacher and learner are separate during a majority of instruction [4]. The separation is by virtue of *time* and/or *space*. The time aspects relates to the fact that, the student need not be involve in the act of learning during the time the teacher is carrying out the act of teaching or instruction. The separation in *space* lays emphasis on the fact that the teacher and the learner are not necessary based in the same location, they are in other words separated by distance, which could place the teacher and the leaner in the same town, city, or country or in different countries as well as allowing for the fact that the teacher could be based in one part of the world while the student is resident in another part of the world. The key point is that, there is no face-to- face contact between teacher and student or learner.

According to [5] the following possibilities in terms of time and space could be used to distinguish DE systems from other types of educational delivery systems:

Configuration	Time	Space/Location	Type
A1	<i>same</i>	<i>same</i>	<i>campus-based, face-to-face</i>
A2	<i>same</i>	<i>different</i>	<i>time-based DE</i>
A3	<i>different</i>	<i>same</i>	<i>space-based DE</i>
A4	<i>different</i>	<i>different</i>	<i>conventional DE</i>

A1: represents the traditional face-to-face same location type of traditional teacher-learner type of classroom teaching environment characteristic of campus-based education and training environments.

A2: represents a type of DE system which may involve the use of radio, satellite, TV, videoconferencing/teleconferencing or the educational delivery technologies and resources of the Internet to deliver live or on-line programs or instructions to the student or learner based in a different location other than that of the presenter or tutor/teacher or instructor. The emphasis here is that separation is only by space not by time; the act of teaching and that of learning is happening at the same time.

A3: Is the reverse of A2; in this case, both the teacher and the learner are based in the same location but there is a time lag between the act of teaching and that of learning. There is no face-to-face contact between teacher and student, and the separation is by virtue of time, not space. A student may for example access teaching materials pre-prepared by a teacher based in the same locality (e.g. same university) as the student, or student may have access to a pre-recorded TV or radio broadcast forming part of a teaching or instructional material for a given educational or training program.

A4: Is an exact opposite of A1. It is a typical type of teacher-learner relationship of most DE program where the teacher and the learner are separated both in terms of time a space. Within this arrangement, a DE student could follow a program of study at a location remote from the DE institution. A4 can deliver learning independent of time, location and learning pace constraints. The student can in fact learn at his/her own pace without the need to be available at the time of instruction nor does he/she have to satisfy residency requirements normally associated with conventional face-to-face campus-based institutions.

Distance education represented by either A2 or A3 has been carried by DE centers within traditional campus-based universities and colleges or by purely DE institutions. It is also possible to have a situation where, the DE institution or establishment exist more or less as a virtual institution or organizational set- up that link to its students or other DE set-ups by means a transmission or delivery systems or technologies e.g. via satellite, TV broadcast or more recently by means of the global-reach information delivery resources, technologies and platforms of Internet. The emerging virtual/open

universities made possible mainly by the Internet technology are examples of the later types of DE institutions.

ODL – Going Beyond the Traditional DE

Although distance education (DE) has been around in one form or another for a number of years, the availability of new educational technologies is opening up opportunities for implementing electronic-based DE on a much larger scale than was possible before. Traditional or conventional DE without the deployment of advanced technologies to facilitate the teaching and learning process as is the case in a number of public and private higher education institutions (HEIs) in African countries is becoming a thing of the past world-wide. [5]

Generally, ODL can be perceived as a powerful means to utilize the emerging communications, and multimedia presentation, messaging and educational delivery technologies and resources of the Internet or other organizational and global networks and systems for the delivery of teaching and learning materials and information. ODL can in addition to supporting non-campus-based education and learning could be used to complement and supplement face-to-face campus based education. According to [6], ODL represents a paradigm shift from the traditional DE as illustrated in Figure 2.

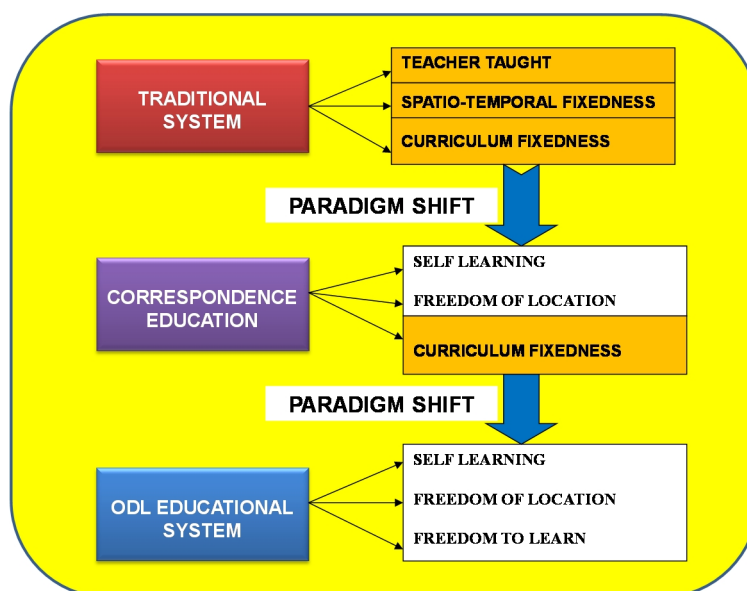
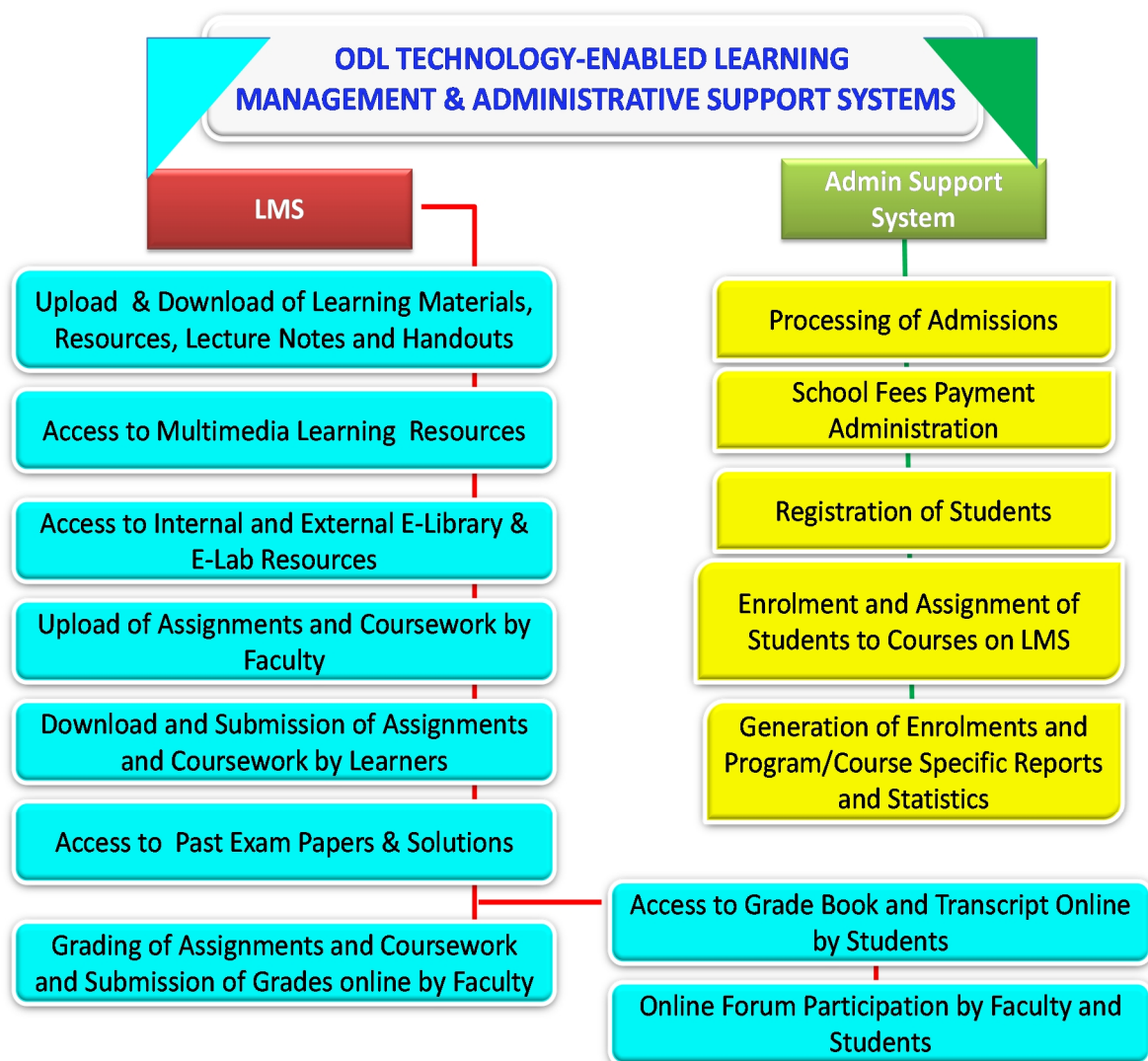


Figure 2: Characterization of DE-ODL Paradigm Shift

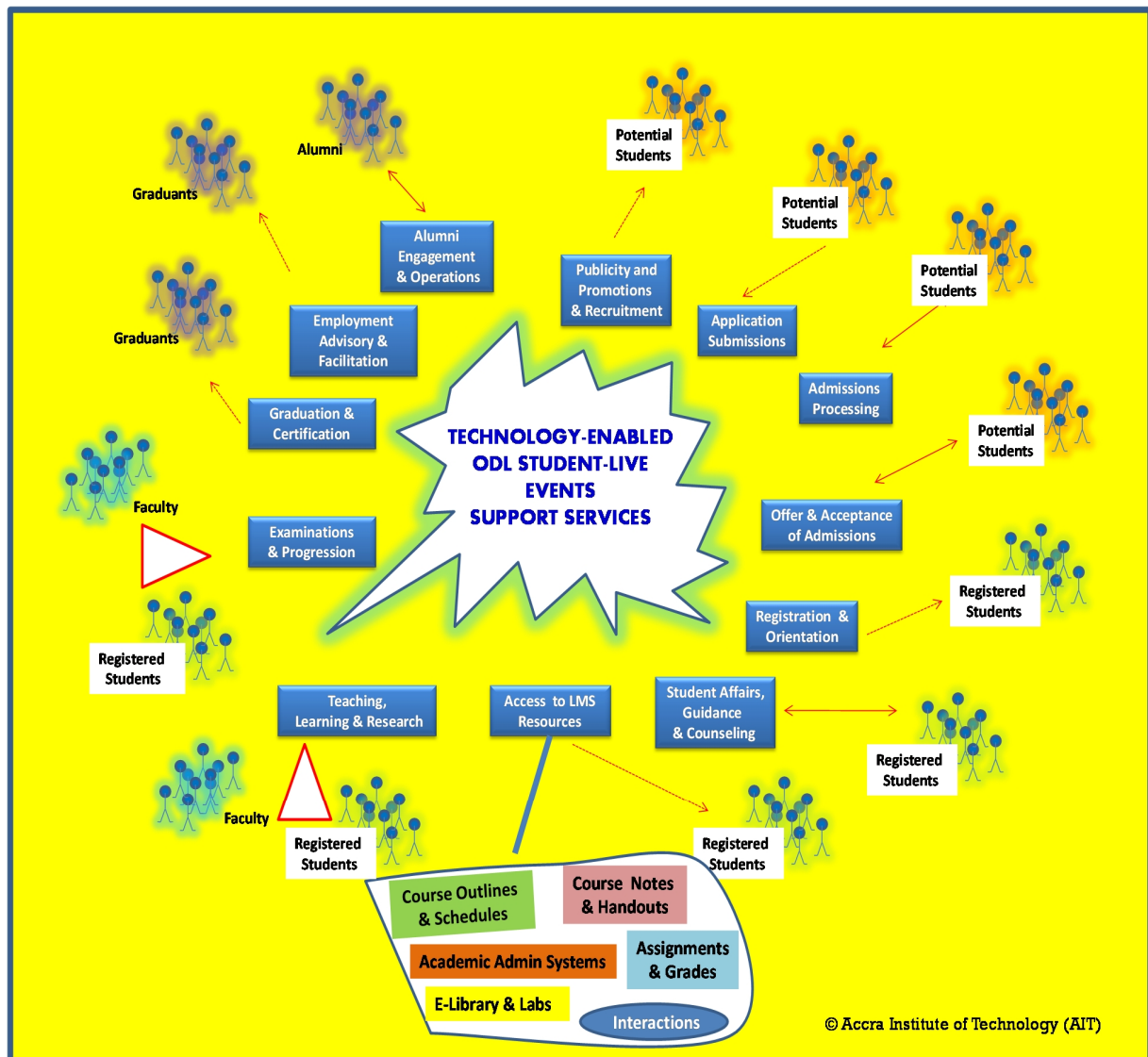
According to [2], the terms *open learning* and *distance education* represent approaches that focus on opening access to education and training provision, freeing learners from the constraints of time and place, and offering flexible learning opportunities to individuals and groups of learners. – It reflects both the fact that all or most of the teaching is conducted by someone removed in *time* and *space* from the learner. More specifically ODL is defined in [2] as; any course, -- delivered to students at a distance from the host institution, which has a significant component delivered to students *online*. - This definition, which is adopted in this paper excludes traditional distance learning courses that do not use online technology as a mode of delivery but does include blended or hybrid learning course delivery that combine a majority of online study with some face-to-face attendance.

The distinctive feature of the ODL is *e-learning* - with learners having online access to learning resources anytime and anywhere, whether they are in a classroom environment, at home, at work or on- the-move. With e-learning, geography and distance is not a variable as is in the case of traditional/conventional DE. There is no concept of ‘distance’ in an ODL environment. E-learning is becoming an increasingly mainstream feature of the educational delivery system and as a means to facilitate changes and transformation of education and training including work-based training and learning and professional development. Because of its interactive capacity and because it provides learning resources which can be changed and turned into new information, e-learning within an ODL environment is qualitatively different from the traditional DE model [5].

A key component of ODL educational delivery environment is the use of educational technology systems and platforms for supporting learning management (e.g. Learning Management System – LMS) and educational administrative system. Typical elements of an ODL technology-enabled learning and administrative support systems are illustrated below. The LMS component provides systems for supporting various aspects of course delivery and access to learning resources targeted at learners and course/program facilitators/tutors/teachers. The administrative support system component provides technological solutions and systems to support various aspects of student/learner administration and facilitation.



The more advanced ODL technology-enabled educational delivery environments being deployed by some higher educational institutions, goes beyond the deployment of LMSs and learner administrative support systems to deploy advanced ODL systems capable of facilitating and supporting various *student-live events services* as illustrated below.



On the whole the benefits of ODL deployment go beyond those that can be associated with the educational institution that deploys these technologies and system to support and facilitate the learning process. It is pointed out in [2] that, ODL from the perspective of the *learner* can be seen as providing enhanced access and flexibility to enriched and quality learning and educational resources in a more learner-centered environment that encourages various form of learner-to-learner; learner-to-teacher/facilitator interactions. From the perspective of the *employer*, it is argued that ODL offers high quality and cost effective work-place or in-service professional development, training and skill upgrade possibilities that could impact on productivity. Also noted is the fact that the deployment of ODL with the educational system do offer *governments*, the potential to expand access to education and training to a wider group of the population that have hitherto have limited or no access to conventional education and training avenues.

4.0 Exploring the ODL Landscape in Africa: The Potentials and the Challenges

The use of the emerging educational technologies to service new ways of education, training, and learning, as well as research collaborations, supervision and coordination, is beginning to make the massive implementation of ODL a realistic possibility in a number of African countries. We argue that for African countries, the majority of which, because of their weak economic infrastructure are facing serious problems meeting their education budget and other public expenditure commitments, the emerging ODL educational delivery technologies to support electronic-based education, professional development and training is providing new ways of education, training and learning as well as a window of opportunity to supplement the limited educational resources in these African countries. The implementation of ODL in Africa, can assist in reducing educational costs and make education and training more accessible to a wider audience. The use of these technologies to support education delivery will also improve learner involvement and participation, enhance the quality of the learner-teacher relationship and boast learner achievement and confidence.

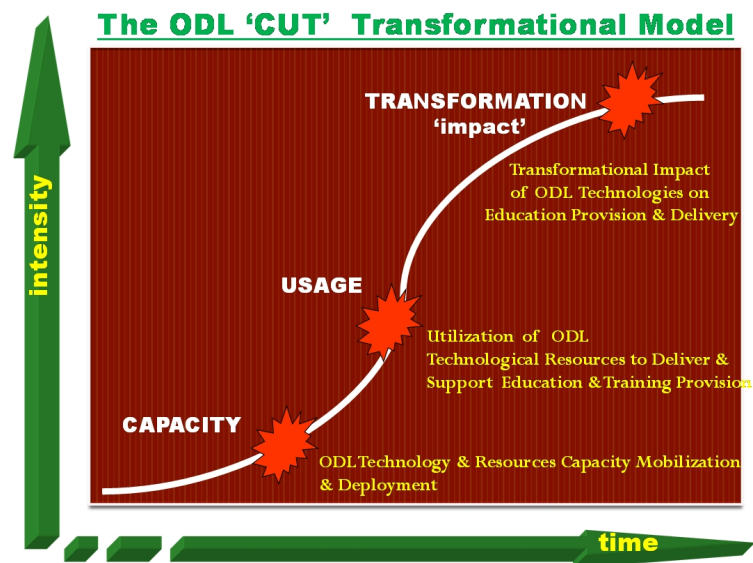
Within the context of African countries, ODL delivery technologies and system has the potential to:

- broaden access to education and ensuring equity of access to educational resources;
- improve quality and standards, in the delivery of education and training;
- empower learners through facilitating more active learning and learner participation in the learning process
- support creative and innovative teaching and learning within the educational system;
- make the educational system more flexible and responsive to the individual needs of learners and teachers/lecturers;
- give rise to a better value education system – in terms of quality and economy of delivery; and
- support continual updating of professional knowledge.

There are however some challenges which these African countries will need to address to ensure the effective roll-out of the emerging advanced ODL delivery technologies and platforms to support teaching. A number of these challenges identified in [7] include:

- weak support for ODL from political authorities
- lack of comprehensive policies on ODL
- underfunding for higher education
- limited use of ICTs to support teaching and learning
- inadequate supply of professionally trained ODL personnel
- inadequate learner support services
- lack of monitoring and evaluation systems
- lack of, or ineffective, quality assurance systems
- negative perceptions about ODL
- absence of strategies for mainstreaming gender in ODL programs

Currently the majority of African higher education institutions (HEIs) are implementing conventional DE systems with few deploying some basic ODL technologies to support mainly access to learning resources online. Some have deployed LMS technologies and systems and are using some elements of ODL administrative systems to support processing of admissions and registration of students. Unlike in the case of Asia that has a number of purely ODL universities, there are few such institutions in Africa. Examples are University of South Africa (UNISA), Open University of Nigeria which to some extent deployed ODL technologies and systems. The other example is the Accra Institute of Technology (AIT), which operates a dual system of: campus-based university system as well as an open university system through an international collaboration with the Open University, Malaysia. AIT is the premier open university in Ghana.



On the whole, the majority of the HEIs in Africa deploying some elements of ODL technologies are traditional campus-based universities that offer some of their academic programs through DE incorporating some elements of ODL technologies and systems. Based on the *ODL 'CUT' model* (illustrated above) the majority of the HEIs offering some element of ODL-based programs, are at the ODL technology and resources *capacity* mobilization and deployment stage with some at the preliminary stages of utilizing these technologies and resources (*usage* stage) to support the delivery of some of their academic programs. The stage at which ODL deployment in these institutions can bring about a *transformational* impact on the provision and the delivery of their educational and training programs is yet to be reached by the vast majority of the few African HEIs involved in implementing some elements advanced ODL technologies and systems.

5.0 Leveraging on Africa's Demographic Dividend through ODL

First coined by Bloom, Canning, and Sevilla [8], the *demographic dividend* refers to the potential economic growth, which can be experienced as a result of changes in the age structure of a population following a decline in fertility. This decline is a part of a population dynamic experienced by all countries known as the demographic transition. The demographic dividend provides an opportunity for accelerated economic growth that results from changes in a country's age structure combined with favorable social and economic policies. It describes the interplay between changes in a population's age structure due to the demographic transition and rapid economic growth. The demographic dividend represents a golden opportunity for many developing countries to experience accelerated economic growth as a result of population changes. Africa in particular is ideally positioned to: create the opportunity for a demographic dividend and develop an environment conducive to reaping the economic benefits [9].

Evidence depicted in Figure 4 shows that South Saharan Africa (SSA) is currently undergoing a demographic transition leading to an increase in the share of the working age population (WAP). Its population which is currently at about 800 million is projected to rise to 2 billion by 2050 and to 3.7 billion by 2100. Between 1970 and 2010, Africa's WAP grew from 92 million to almost 575 million, and will continue growing over the next 40 years. As youth grow older between now and 2050, it is predicted that the size of the WAP relative to the younger dependent-age population (under age 15) is projected to increase significantly, helping to set the stage for a demographic dividend. Specifically by 2050 Africa's WAP is projected to triple to 1.25 billion.

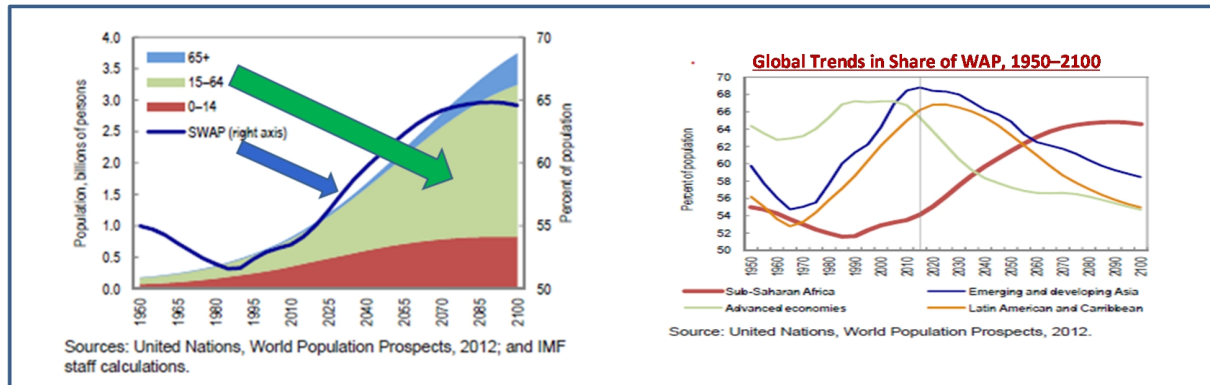


Figure 4: Share of working age population: Africa and rest of the world

According to an IMF Report [10], Africa will account for 3.2 billion of the projected 4 billion increase in the global population by 2100 (Table 1). Its working age population will increase by 2.1 billion over the same time frame, compared to a net global increase of 2 billion, Africa's share of the working age population will increase from about 54 percent in 2010 to peak at about 64 percent in 2090. The magnitude of these demographic developments will be transformational for Africa and will also have major implications for the global economy.

Table 1: Africa Rising

	<i>Total population (bn)</i>			<i>Working age population (bn)</i>		
	2010	2100	Change	2010	2100	Change
World	6.9	10.9	4.0	4.5	6.5	2.0
Africa	1.0	4.2	3.2	0.6	2.7	2.1
<i>Africa/World (percent)</i>	14.9	38.5		12.6	41.2	

Source: IMF staff estimates based on UN World Population Database.

The IMF Report [10], noted that by 2035, the number of sub-Saharan Africans reaching working age (15–64) will exceed that of the rest of the world combined (Figure 5). The magnitude of these demographic developments will have major implications both for SSA and for the global economy, as labor could flow from SSA to other regions and capital could flow from other regions to sub-Saharan Africa. This is a trend the report argued with potentially significant implications for both the region and the global economy including:

- For the Africa, the implications of current trends include a rapid increase in population and a demographic transition—a pronounced increase in the share of working age population (SWAP). In most other parts of the world, (e.g. Asia) similar transitions have been associated with higher saving and investment, raising potential and actual growth. For example, a demographic transition characterized by an increase in the working age population provides a country with a window of opportunity, which if properly tapped can generate a “demographic dividend” from higher growth. Indeed, this occurred in several countries in Asia and helped define the “Asian Miracle”. Conversely, if countries’ economic performance were to falter, the implications of such demographic developments could be dire.

- For the global economy, integrating sub-Saharan Africa's labor force into global supply chains would be beneficial. Indeed, given the aging population structure of much of the rest of the world, there may be little alternative. For the last several decades, the global working age population has been expanding at a rapid pace, supporting higher global growth. But more recently, this trend has started to reverse. On current trends, the world's working age population, excluding that of sub-Saharan Africa, will start to decline by 2050 or so. With aging populations elsewhere, sub-Saharan Africa will drive global population growth in the future.
- In the next 20 years, most of the world's jobseekers will be in Africa and SSA will become the main source of new entrants into the global labor force.

Still on the global implications, the report projected that the rising share of sub-Saharan Africa's working age population is increasing the continent's productive potential at a time when most advanced economies face aging populations and a declining share of their working age populations (Figure 5 and Figure 6a). Sub-Saharan Africa's share of the global labor force is thus projected to increase from 10 percent in 2010 to 37 percent by 2100 (Figure 6a).

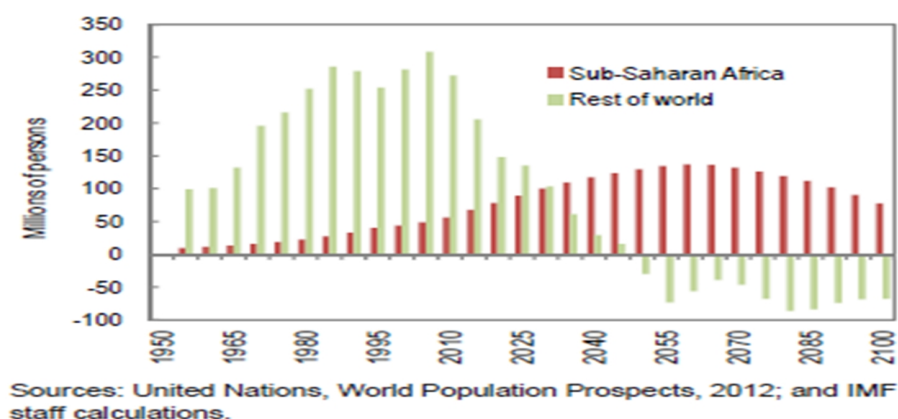
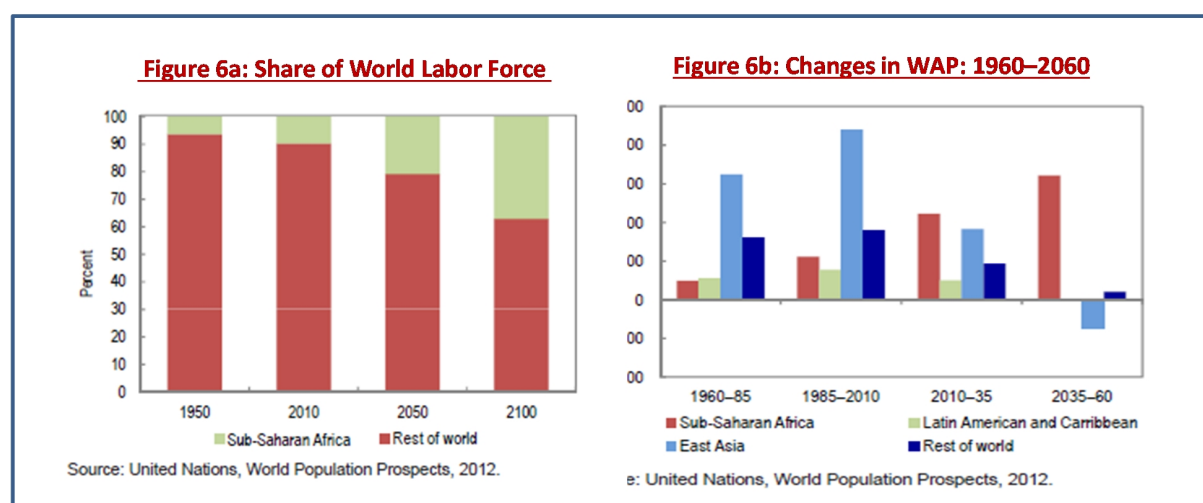


Figure 5: Change in Working Age Population (WAP)

To harness and maximize this demographic dividend, SSA will have to create high-productivity jobs at an average of about 18 million jobs per year until 2035—an extremely rapid and possibly unprecedented rate—to absorb the new entrants in the labor force.



Reaping the fruits of the demographic dividend will require the needed workforce to fuel Africa's development. Enhanced education outcomes will be particularly important to improve the employability of the WAPs in these countries through skill development and improvements in access to educational opportunities and avenues to members of these WAPs.

As noted in [9] investments in human capital are needed to create an environment favorable to the uptake of a large working-age cohort into dynamic sectors that will translate into economic growth. Reaping economic growth from the change in population age structure will require specific education policies to promote the supply of a large and highly educated labor force, which can be easily integrated into economic sectors, particularly manufacturing, in which there is a significant demand for entry-level workers and growth potential [11]. Educational expansion policies should be implemented in conjunction with policies to improve the quality of education primarily through increased availability of secondary and tertiary education institutions [12]. Skills specific to a country's strongest growing economic sectors, particularly those that will spur industrialization, need to be identified and training for the acquisition of these skills should be the focus of educational and employment programs.

In effect, one of the identified key areas that African countries can develop to take advantage of the predicted demographic dividend is to invest in education to transform their WAPs into highly educated and skilled workforce to accelerate their socio-economic development. The contention is that Africa countries will have the potential to become the main source of recruitment of qualified workforce by the rest of the world provided these countries and their higher educational institutions can take advantage of the demographic dividend and invest in human capital development to educate and train members of their growing WAPs to transform them into highly educated and skilled labour force. Buttressing this point, the IMF report [10] pointed out that investments in human capital, including education, will be critical in the early phases to speed up the transition, improve the productivity of the workforce. The report noted that given the significant interaction between the human capital and the magnitude of the demographic dividend, improving and increasing access to education is critical to improve the productivity of workers and support a transition to higher valued added sectors.

Given that a number of these African countries are currently facing challenges relating mobilizing the needed resources to fund their educational system to deliver on the needed human resources to support their socio-economic development, there that danger that they will not be able to take advantage of the demographic dividend to invest in their educational systems to transform their WAPs into skilled labour force to fuel their development in the years to come.

The point being argued is that, at least in the case of expanding access to quality higher education, the deployment and the roll-out of ODL educational technologies and systems in these countries is the easiest and most affordable way to broaden access to quality higher education to enable these countries leverage on the demographic dividend to accelerate their development process at a rate comparable to those experienced by the Asian tigers in the 1980s onwards.

Massive roll-out of home grown ODL programs as well as well those deployed through international collaboration with other partner higher education institutions like those in Asia will apart from providing African educational institutions with an opportunity to educate a greater number than currently is the case, will also no doubt provide these African countries with the opportunity to leverage of the *demographic dividend* in the coming years to address the continent's human resource development challenges to fuel their development in the technological age.

Conclusion

The paper explored the landscape of ODL technologies and examined issues relating to the deployment of these technologies and systems to broaden access to quality and affordable higher education in African countries. The paper contends that for African countries to be able to reap the socio-economic benefits of the predicted demographic dividend to accelerate their development process, they will need to invest in producing highly skilled educated workforce capable of fueling their development in the emerging information age. It is argued that the massive deployment of ODL technologies and systems in African countries to broaden access to affordable quality higher education to facilitate the development of the needed skilled workforce will enable these countries to leverage on the predicated demographic dividend the continent is poised to experience in the coming decades.

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MOBILE LEARNING SUPPORT VIA WHATSAPP MESSENGER

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Abstract

Open and distance learning (ODL) provides wide access for learning opportunities but, it also face one of the most challenging issue which is attrition rate. The quest for supporting ODL learners in their learning and retaining high graduation rates is an ongoing effort. However, appropriate use of technology can take the distance out of the learning. The rapid advancement of mobile technology and the remarkable rate of smart phone penetration globally have drawn great interest of the possibly usage of mobile devices to support learning, particularly learning in ODL setting. Open University Malaysia (OUM) recently embarked on a pilot project in using the mobile app called WhatsApp Messenger to provide learning support services to the newly enrolled undergraduate learners. WhatsApp Messenger is a cross-platform mobile messaging app which sends real-time messages to individuals and groups of people via the Internet. The mobile learning support was delivered to about 3000 learners in the January semester 2015. The mobile learning messages were in the form of image, audio and video in addition to the text format. There were areas of mobile learning support namely, (1) important announcements, (2) learning tips, (3) guide on myVLE (OUM's learning management system) and (4) information on helpdesk support available in OUM. An online survey was done to gather learners' feedback to determine their usage patterns, and perceptions and attitudes towards the provision of such mobile learning services. The findings of this study revealed that the mobile learning support via WhatsApp messenger has successfully helped supporting learners in their learning and completing the assignment. Majority of the learners considered the messages were useful, worthy of their time and found the messages to be interesting as well motivating. In addition, the study indicated that the learners preferred text format messages and also preferred the announcement cum reminders type of learning support. The paper also highlights the lessons learned and experience from the project.

Keywords: Mobile learning, WhatsApp Messenger, instant messaging

1. Introduction

Today there is over 7 billion mobile phone subscription which is more than the people in the world. Mobile phones are the fastest growing phenomena of man-made technology. The technology of these devices is continuously advancing. Mobile phones are getting more prevalent and smart and perform almost the same functions and features of the personal computers (Bansal & Joshi, 2014). As such, these trends matters to learning industry.

Mobile learning refers to learning delivered through mobile devices such as smart phones, tablets, laptops, MP3 players, or any other mobile technology that allows the learners to learn at anywhere and at any time while being mobile.

Mobile phones devices are equipped and enabled with powerful tools that are feasible for supporting learning and sharing of information and knowledge. One such feature is the WhatsApp Messenger application, a cross-platform mobile messaging app which sends real-time messages to individuals and groups of people with no extra cost other than that incurred by the Internet connection. WhatsApp is widely used by mobile phone users to communicate and share information in the form of text, images, audios, videos and also location information.

According to Statista (2015), Whatsapp ranked top for the most popular global mobile messenger app as of March 2015, with 700 million active users per month followed by Chinese WeChat with 549 million in Asia alone, Japan-based LINE at 250 million users and South Korea Kakao Talk. As of the fourth quarter of 2014, Malaysia was ranked as the second most active user of WhatsApp globally with 75% mobile internet users. This indicates that the popularity of free mobile messenger applications has increased and its usage has become ever more ubiquitous.

WhatsApp has been an effective tool for supporting learning as reported by the recent studies (Barhoumi, 2015, Plana et al., 2013 and Rambe & Bere, 2013). Rambe and Bere (2013) analysis of the WhatsApp Messenger characteristics using The FRAME Model highlighted the followings:

- provided just-in-time learning at anytime, anywhere and enables flexible learning;
- reduced the cognitive load;
- initiated peer-based coaching and group collaboration;
- accessibility to network across different spaces and platforms;
- created authentic learning environments that suit different learners' academic circumstances and learning styles;
- fostered a community of practice.

A study conducted by Amry (2014) compared the effectiveness of the face-to-face learning classroom with and without WhatsApp social networking. The study reported that WhatsApp mobile social learning significantly showed positive impact on the learners' achievement and the attitudes of learners toward the WhatsApp tool. The learners perceived that the new educational technology tool had made learning easy, helped in problem solving and assisted in learning difficulties related to the learning process and the course content that was delivered through the WhatsApp.

Bansal and Joshi (2014) also revealed that learners found learning through WhatsApp educationally useful and their social interactivity with their peers and teacher were increased through collaborative learning. The attitude of the learners toward WhatsApp mobile learning was favorable but, the married learners found learning through WhatsApp disruptive and that they prefer learning in traditional classroom as it does not collide with their family time.

Low course completion rates and high student attrition rates in distance learning are mainly due to learners do not possess the self-regulation skills and time management skills needed for successful learning. Procrastination and lack of learning strategies are also a commonly cited problem in distance learning (Terrell & Dringus, 2000). Lack of academic and technology support are among the crucial factors determining the decision to drop out from distance learning (Park & Choi, 2009).

Due to the nature of distance learning, distant learners are separated by space and time from the instructor and peers. This may make distant learner feel isolated and have great risk of not feeling the learning experience as would have by the traditional university learners. Distance learners tend to be more vulnerable in making decision to drop out due to unable to cope with the study workload while managing family and job responsibilities (Rovai, 2003). As such there is a need to bridge the distance gap which is referred as psychological distance (Wolcott, 1996).

Activities such as group discussions, using common graphics and visual images, providing information about support services, and making it easy for learners to contact the instructor can help to decrease isolation and psychological distance (Wolcott, 1996).

In view of that the purpose of this study was to provide learning support via WhatsApp Messenger. However, in a distance learning university such as Open University Malaysia (OUM), it may not be feasible to include the collaborative discussion elements and two-way communications into the mobile learning support which are more suitable for small size classrooms. Instead, the messages were broadcasted to large number of new learners.

Thus, this study was conducted to investigate the followings:

1. learners' usage pattern of the OUM Mobile Learning WhatsApp messages
2. identify the preferred types of OUM Mobile Learning WhatsApp messages
3. learners' perception of the usefulness of OUM Mobile Learning WhatsApp messages for learning
4. learners' general attitude towards OUM Mobile Learning WhatsApp messages

This paper is the extension of the earlier paper by Harvinder et al. (2015). The objective of this paper is to highlight the findings related to the learners' perception of the usefulness and attitude towards WhatsApp mobile learning support. Detail findings of the usage pattern and preferred types of messages were reported in Harvinder et al. (2015). In a nutshell, Harvinder et al. (2015) conveyed that WhatsApp Messenger is primarily used for chatting with friends and accepted as a media for social networking. A total of 69.3% of the respondents read or viewed the message immediately followed by 29.3% of the respondents who read or viewed the messages when they were able to do so. None of the respondents deleted the message. 50% of the respondents preferred text type WhatsApp messages, followed by image type WhatsApp messages (32.7%) and video type WhatsApp messages (13.3%).

2. Methodology

WhatsApp mobile learning was administered to the first semester new learners. The study was conducted during January 2015 semester at Open University Malaysia (OUM). OUM practices a blended learning approach which comprises face-to-face tutorials and online learning via the University's in house developed learning management system. The WhatsApp mobile learning was additional learning support given to the learners. All participants participated voluntarily and used their own personal mobile phone device with WhatsApp Messenger application.

2.1 Sample

Mobile learning support was given to 2,934 first semester learners taking OUM's undergraduate programmes. A total of 12 groups of learners were formed, with each group comprising a maximum of 250 learners. These learners were located across the country in 34 learning centres. However, only 150 participants responded to the online survey questionnaire via their mobile phone. As shown in Table 1, the majority of the respondents (61.3%) were female. About 50% of the respondents were from the age group 21 to 29 years, followed by 29.3% in the age group 30 to 39. Most of the respondents (84.7%) had Internet data plan on their mobile phones and majority of them accessed WhatsApp using it (64.7%).

Table 1: Demographic Details of the Respondents of the Survey

Demographic		Number	Percent (%)
Gender	Male	58	38.7
	Female	92	61.3
Age	Below 21 years	8	5.3
	21 – 29 years	75	50
	30 – 39 years	44	29.3
	40 – 49 years	20	13.3
	Above 50 years	3	2
Internet data plan	Yes	127	84.7
	No	23	15.3
Usually access WhatsApp	Phone Internet data	97	64.7
	Wifi at home	37	24.7
	Wifi at work	13	8.7
	Free Wifi at other places	3	2
Total Respondents		150	

2.2 Types of Messages

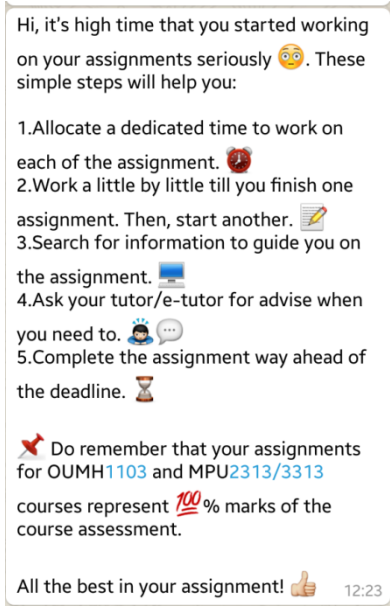
Ostman and Wagner (1987) found “lack of time” to be the single most commonly cited reason for dropping out. Garland (1993) found poor direction and feedback on assignments, problems with time management, and students trying to accomplish too much were reasons for attrition. As such, four types of messages were created to specifically provide guidance and learning tips as well as information of available support to help distance learners in their studies. The four areas of mobile learning support namely, (1) important announcements, (2) learning tips, (3) guide on myVLE (OUM’s learning management system) and (4) information on helpdesk support available in OUM. The messages were in various format such as text, graphic, audio and video. Hence, the messages were designed accordingly to fit for the purpose. A total of 23 messages were delivered to the learners. Table 2 shows the number of messages by category and by format.

Table 2: Number of Messages by Category and by Format

Category \ Format	Format				Total
	Text	Text + Image	Audio	Text + Video	
Important announcements	5	2	1	2	10
Learning tips	3	1		5	9
Guide on myVLE	1			3	4
Information on helpdesk support		2			2
Total	9	5	1	10	25

The messages that contained image and video were also accompanied by text. This means the number count of the messages in Table 2 is based on the content or topic of concern for the message and not number of messages that were broadcasted for each topic. Figure 1 shows some examples of the mobile learning messages.

The text messages included meaningful emoji from the list of available emoticons in WhatsApp Messenger. Messages filled with emoji helps learners to process the messages more effectively as images are more representative than words. Messages with emoji are like pictographic script that helps to convey emotion and expression and lighten the communication, thus leading to an enrichment of the messages.

Category	Examples
Text	
Image	<p>[4/2, 4:58 PM] OUM Mobile Learning:</p> <p>Dear Learners,</p> <p>As part of OUM's commitment in providing quality tutoring, we value your feedback on tutors. Please respond to the short survey "Learner Evaluation on Tutors". It will only take 2 minutes or less. The Tutor Rating System link can be found by clicking the Feedback icon at the right side of myVLE. Then, continue by clicking the Tutor Rating System icon. Kindly view the steps in the image to access the survey form.</p> <p>Thank you for your contribution in evaluating OUM tutors 😊</p>

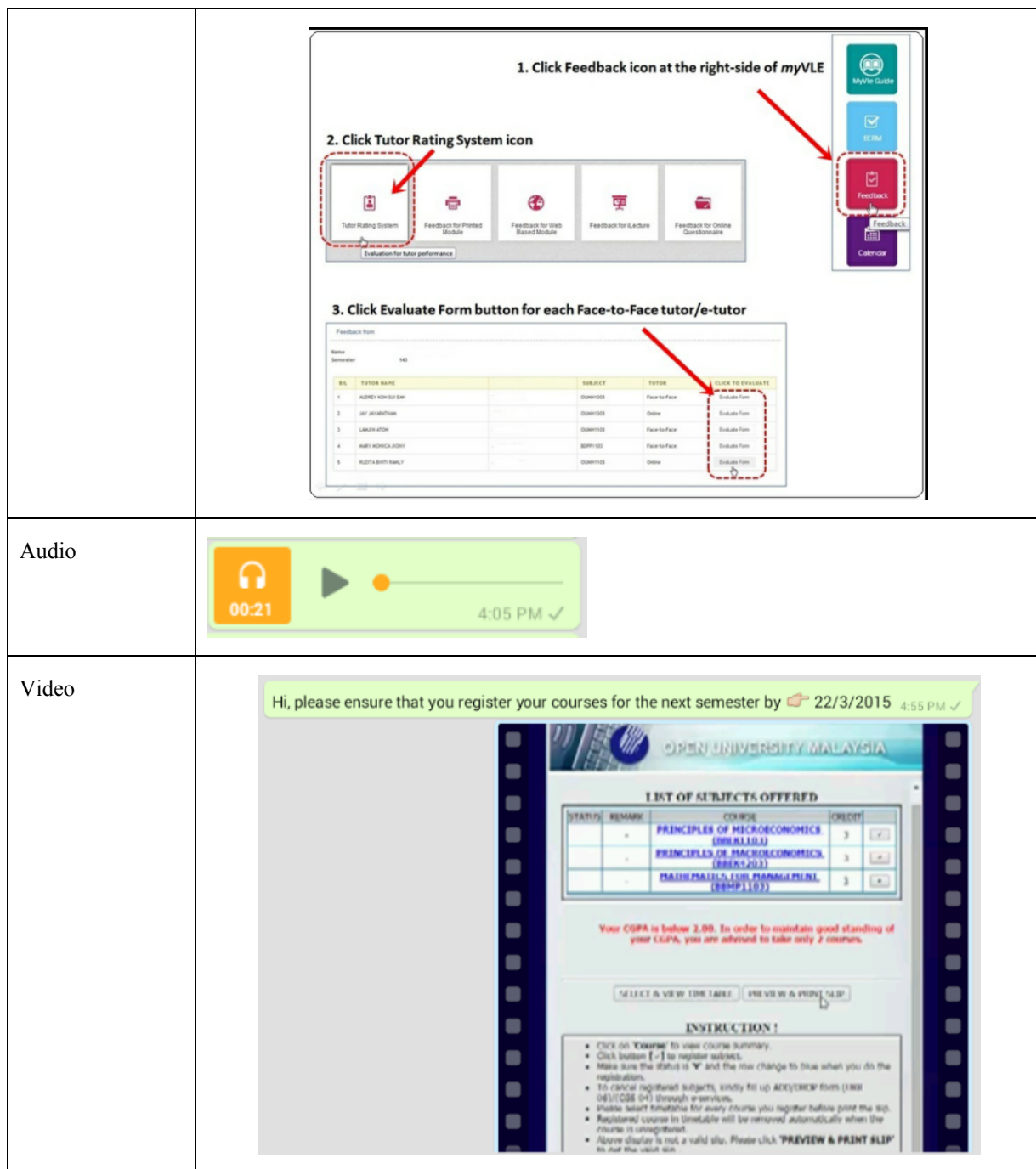


Figure 1: Screen shots of WhatsApp messages

2.3 Software and Hardware Tools

At the start, a BlueStacks App Player was downloaded to host the WhatsApp Messenger on the laptop. This software enabled broadcasting of WhatsApp messages to unlimited number of groups with a maximum of 250 recipients per group instead of only limiting to 100 recipients per group using the mobile phone device. A local pre-paid phone SIM card number was keyed in the software system which then allowed the laptop to function as a phone device. The audio and video recordings of the messages were done using the smart mobile phone and Snagit 12 Editor software. Some of the video messages were sourced from the YouTube. In addition, the images in the messages were captured and edited using PhotoScape software.

2.4 Procedure

The methods and the procedures of the study involved the following phases:

Phase 1: Development of Mobile Learning Messages

- Identifying the learning support required by first semester undergraduate learners
- Formulating the mobile learning messages using pedagogically sound strategies

Phase 2: Implementation

- Creating database of learners' mobile phone contact numbers.
- Promoting learners to join OUM WhatsApp Mobile Learning Support group
- Scheduling the mobile learning messages appropriately into the semester calendar
- Delivering / broadcasting the mobile learning messages to the learners. As the mobile learning support was delivered to large number of learners it was impractical to allow 2-way communication between the teacher and the learners. The learners were discouraged to reply to the messages as to avoid the overwhelming number of messages that will likely to occur in the group if this option was enabled.

Phase 3: Evaluation

- Collecting feedback about learners' experience through online survey
- Analysing the responses.

2.5 Data Collection Instrument

An online questionnaire instrument was used for the data collection. The survey link was sent to participants through a WhatsApp message. The questionnaire had 6 question items under the demographic section and 26 questions items were on the mobile learning experience covering areas: usage pattern, preferred message type, usefulness and attitude. The questions related to usefulness and attitude areas were developed using five points Likert Scale (Strongly Agree, Agree, Neutral, Disagree and Strongly Disagree).

3. Discussion of Findings

(a) Perceived Usefulness for Learning

Table 3 shows the perceived usefulness of the various categories of messages namely, (1) important announcements, (2) learning tips, (3) guide on myVLE (OUM's learning management system) and (4) information on helpdesk support available in OUM. Majority of the respondents (75.3%) perceived the 'important announcements' type of messages were useful. 72.7% of the respondents found the messages were useful for their learning. However, only 65.3% of the respondents found the messages were helpful in completing the assignment and slightly more than half of the respondents (57.3%) indicated that the learning tips helped them to do the assignment easily. 70.7% agreed that the messages provided useful guide on myVLE. 66% of the respondents felt the messages were useful to provide information on helpdesk support that are available in OUM. The survey showed that the 'important announcement' type of category messages were not only the most preferred messages (Harvinder et al., 2015) but also was perceived as the most useful type of messages. It can be implied that WhatsApp tool was useful in delivering and receiving the four types of messages. The messages were pushed to the learners and can be referred at anytime as they are available at all time on their

device. In addition, a variety format (text, image and video) were utilised in presenting the information effectively.

Table 3: Perceived Usefulness of the Types of Messages

Question	Message Categories	Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	OUM Mobile Learning WhatsApp messages are useful for my learning	5 (3.3%)	6 (4%)	29 (19.3%)	39 (26%)	70 (46.7%)
2	2	OUM Mobile Learning WhatsApp messages help me in completing my assignment	5 (3.3%)	13 (8.7%)	34 (22.7%)	43 (28.7%)	55 (36.7%)
3	3	OUM Mobile Learning WhatsApp messages give useful guide on using myVLE	4 (2.7%)	9 (6%)	31 (20.7%)	45 (30%)	61 (40.7%)
4	2	I was able to do my assignment easily with the help of the tips in OUM Mobile Learning WhatsApp messages	6 (4%)	13 (8.7%)	45 (30%)	38 (25.3%)	48 (32%)
5	1	I like the reminders given to me through the OUM Mobile Learning WhatsApp messages	3 (2%)	6 (4%)	28 (18.7%)	44 (29.3%)	69 (46%)
6	4	OUM Mobile Learning WhatsApp messages provide useful information on the helpdesk support that are available in OUM	3 (2%)	10 (6.7%)	38 (25.3%)	47 (31.3%)	52 (34.7%)

(b) Attitude Towards WhatsApp Mobile Learning

Table 4 shows 74% of the respondents confirmed that they liked to receive and read the messages. In addition, 70% of the respondents agreed to recommend their fellow learners to join the mobile learning group. When asked whether the respondents were bored with the messages, 65.3% disagreed. Despite the overall attitude is positive towards the mobile learning support messages but the respondents also felt that did not fully gained from the mobile learning support as only 52.3% said the mobile learning support was sufficient, 60% reported that the messages made their learning easier, 62.7% taught the messages were interesting and 63.3% felt motivated to study due to the messages. However, the low respondents for these items did not totally mean that they disagree as large percentage of the respondents opted to be neutral for sufficient learning support (36%), messages are interesting (30%), made learning easier (29.3%) and motivation to learn (26.7%). The survey responses suggest that simple mobile learning support will not necessarily improve learning in a specific course. In order to support actual learning of a particular course, there is a need for appropriate instructional design and pedagogy for mobile learning.

Table 4: Attitude towards Mobile Learning WhatsApp

Items	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I like to receive OUM Mobile Learning WhatsApp messages	4 (2.7%)	4 (2.7%)	31 (20.7%)	44 (29.3%)	67 (44.7%)
2. I would recommend my fellow learners to join the OUM Mobile Learning WhatsApp group	4 (2.7%)	6 (4%)	34 (22.7%)	44 (29.3%)	62 (41.3%)
3. I will read/view all messages received from OUM Mobile Learning WhatsApp team	4 (2.7%)	4 (2.7%)	31 (20.7%)	41 (27.3%)	70 (46.7%)
4. I will share OUM Mobile Learning WhatsApp messages with other learners	0 (0%)	0 (0%)	150 (100%)	0 (0%)	0 (0%)
5. I am motivated to study whenever I received OUM Mobile Learning WhatsApp message	7 (4.7%)	8 (5.3%)	40 (26.7%)	49 (32.7%)	46 (30.7%)
6. OUM Mobile Learning WhatsApp messages were simple to understand	4 (2.7%)	4 (2.7%)	39 (26%)	43 (28.7%)	60 (40%)
7. I think most of the OUM Mobile Learning WhatsApp messages are interesting	4 (2.7%)	7 (4.7%)	45 (30%)	50 (33.3%)	44 (29.3%)
8. I received sufficient learning support through OUM Mobile Learning WhatsApp messages	5 (3.3%)	14 (9.3%)	54 (36%)	44 (29.3%)	33 (22%)
9. *I feel bored with most of the OUM Mobile Learning WhatsApp messages	64 (42.7%)	34 (22.7%)	27 (18%)	15 (10%)	10 (6.7%)
10. OUM Mobile Learning WhatsApp messages made my learning easier at OUM	4 (2.7%)	12 (8%)	44 (29.3%)	44 (29.3%)	46 (30.7%)

*Note: Negatively stated item.

4. Conclusions

The results of this findings show that WhatsApp mobile learning support was perceived useful and learners indicated positive attitude towards mobile learning. The messages were pushed to learners to keep the learners connected with their learning environment and to help reduce the isolation feelings. Broadcasting one to three messages per week regularly in the semester helped to create a connection between the learners and OUM. Learners were able to access information from their mobile devices, regardless of the time and location. Thus, future studies need to consider the ubiquitous nature of mobile learning technologies in adopting and designing appropriate mobile learning pedagogy.

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ONTOLOGICAL STRUCTURE REPRESENTATION IN REUSING ODL LEARNING RESOURCES

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Abstract

The needs to formally reuse learning resources into ontological structure representation has been extensively explored in ODL education. The capability of ontological structure to add meaning to information, indexed in such a way that it can be reused, searched, processed and shared provide the mechanisms to promote effective learning facilities. As such, it is the interest of this paper to introduce ontological structure by reusing learning resources obtained from course module and forum discussion in ODL settings. Thus, ontology is designed with SKOS specification to structure the learning resources into concepts and relationships in order to highlight the essential learning component. Furthermore, a semantic forum system is proposed as a front end mechanism to represent the ontological structure designed for learner to easily access, search and navigate the relevant knowledge of interest. This study evaluates the effectiveness of the proposed system along with three dimensions namely learners' perceptions, system design perceptions, and system content perceptions. Accordingly, a close-ended online survey was developed and administered to 74 online learners. The findings demonstrate positive perceptions of an effective learning system that able to contribute in enhancing the understanding of course taught.

Introduction

The success of ODL education highly depends on how well the course offer is designed, evaluated and delivered. Many have suggested ODL institution to focus on exploring and developing new learning technologies to further facilitate learning and improve the effectiveness of the education (Koper, 2013; Sahin & Thompson, 2007). Despite various web based learning resources that is managed through the use of learning management system, the main learning resource to achieve desirable learning outcome still highly depend from course module or textbook and forum discussion. A course module refers to a unit of teaching or an academic course taught in a semester or one academic term. It contain well-organized structured content presented in a hierarchical structure with chapters, sections and subsections on the course of concern. Meanwhile, forum discussion is a communication platform that provides opportunities for reflective learning, sharing opinions, problem solving, articulation and collaboration among peers and tutors. This platform capable to build very large archives of question-answer knowledge across courses and semesters over the time.

Therefore, mining and reusing such knowledge is highly desirable and valuable to enhance learning of the course taught. Although many researchers claim the importance of reusing such knowledge, few have took efforts to compile, organize and represent this knowledge. This is because mainly forum discussion is not formally organized and scattered throughout huge textual resources. Furthermore, classifying, extracting, accessing and reusing relevant knowledge of interest from such a pool of "unstructured" question-answer resources are challenging tasks, so do effort to integrate these resources with course module knowledge. What is required is a method to response more rapidly to needs and inquiries, reduce rework and just in time to help learners to learn (Abel, 2009).

Therefore this study aims to introduce ontological structure representation by reusing learning resources obtained from course module and forum discussion. Ontology is used to formally represent the knowledge structure of learning materials (Chi, 2009) and able to describe an area of knowledge by defining the common concepts of that domain with concepts properties and relationships (Daconta, Obrst, & Smith, 2009). Ontological structure representation has already been recognized and used in ODL education (Aroyo, Dicheva, & Cristea, 2002; Fischer, 2001; Holohan & Pahl, 2005; Pahl &

Holohan, 2009) with different purposes ranging from the definition of a domain-specific terminology to the use of conceptual models and inference in the generation and composition of learning content and systems.

Ontological Structure Representation

The term ontology is borrowed from the field of philosophy that is concerned with the study of being or existence. The term has emerged in the field of computer and information science, denoting the meaning of ontology as an artefact that is designed to model any domain knowledge of interest. The most widely cited definition of ontology in the computer field is from Gruber (1995) defines it as an “explicit specification of a conceptualization”. In other word it means that ontology able to explicitly defines (specifies) concepts and relationships that are relevant for modelling domain of interest. The specification can takes in the form of classes, relations, constraints and rules to provide more meanings of vocabulary use.

In order to describe the importance of ontology in structuring the knowledge of interest, Figure 1 shows level of semantic, where ontological structure represents the highest semantic richness or strong semantics of all knowledge organization system. Meanwhile, Figure 2 illustrates on how ontology can provide a means in adding semantics to web resources (Cardoso & Sheth, 2006). For further explanation, on the left side of Figure 2, a diagram representation of the normal web is given. Resources are linked together forming the web. There is no distinction between resources or the links that connect resources. To give meaning to resources and links, ontological structure is used aided with semantic web technologies standard and languages. The rules and descriptive information made available by these languages allow the type of resources on the web and the relationships between resources to be characterized individually and precisely, as illustrated on the right side of the diagram. Fensel (2004) additionally states ontology bring the web to its full potential by uniting two important aspects which are to describe real-world semantics and to allow machines to process these translated formal semantics for information.

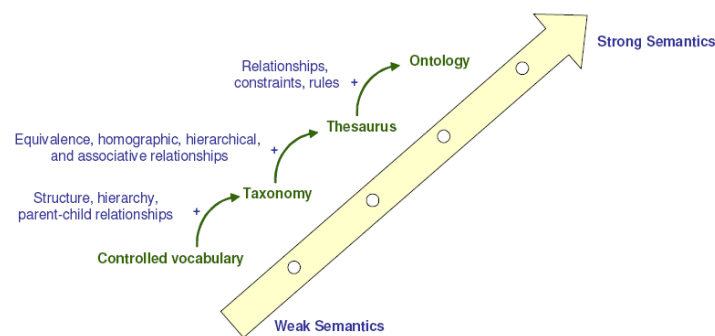


Figure 1: Level of semantics for ontology

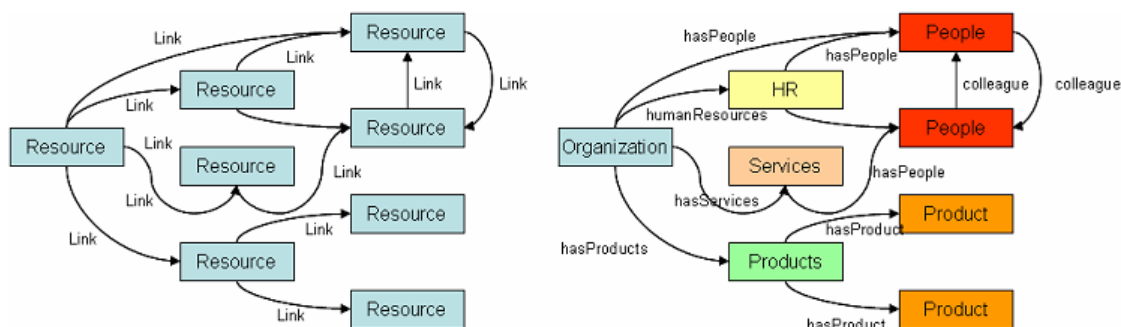


Figure 2: Evolution of the web

This study reuse learning resources from System Analysis and Design (SAD) course module and forum discussions knowledge. The SAD course is chosen because it is a core subject in a mature computing discipline and it is offer for every semester to the learners. The ontological structure is designed based from Uschold and Gruninger (1996) ontology engineering method that involves 1) identification of the key concepts and relationships in the domain of interest, 2) production of precise unambiguous text definitions for these concepts and relationships, 3) identification of terms to refer to such concepts and relationships, and finally, reaching agreement on all of these.

In order to offer semantic richness from the designed ontology, the effort to reuse specification from existing knowledge organization standard is a priority. Thus, this study extends Simple Knowledge Organization Systems (SKOS) ontology developed by the World Wide Web Consortium (W3C) community as a standard to classify and index the learning resources. SKOS is a common ontology model for sharing and linking knowledge organization systems such as thesauri, taxonomies, classification schemes, structured controlled vocabulary and subject heading systems via the Web (Panzer & Zeng, 2009). Thus, the SKOS specification for the ontology designed is presented in Table 1.

Table 1: SKOS Specification

Term	Definition
skos:Concept	An abstract idea or notion; a unit of thought.
skos:ConceptScheme	A set of concepts, optionally including statements regarding semantic relationships between those concepts.
skos:hasTopConcept	A top level concept in the concept scheme.
<i>Semantic relationships properties</i>	
skos:broader	Relates a concept to another concept that is more general in meaning.
skos:narrower	Relates a concept to another concept that is more specific in meaning.
skos:related	Relates a concept to another concept with which there is an associative semantic relationship.
<i>Documentation properties</i>	
skos:prefLabel	The preferred lexical label for a resource, English language
skos:altLabel	An alternative lexical label for a resource, Malay language
skos:note	A general note for any purpose
skos:links	A general link for any purpose

The process to capture the learning resources into ontology began with structuring the SAD course into concepts and its relationship according to SKOS specification. Concept is defined as key terms or keywords discussed in the course module. Figure 3 indicates example of identified concept and types of relationship used in this study. Organization of concepts according to appropriate relationship types able to help learner to see the structure, understand what is important and what should be learned of such concept. The use of concepts and its relationships is similar to a dictionary or glossary, but with richer structure, relationships and axioms that describe the domain knowledge more precisely (Millard, Tao, Doody, & Woukeu, 2006).

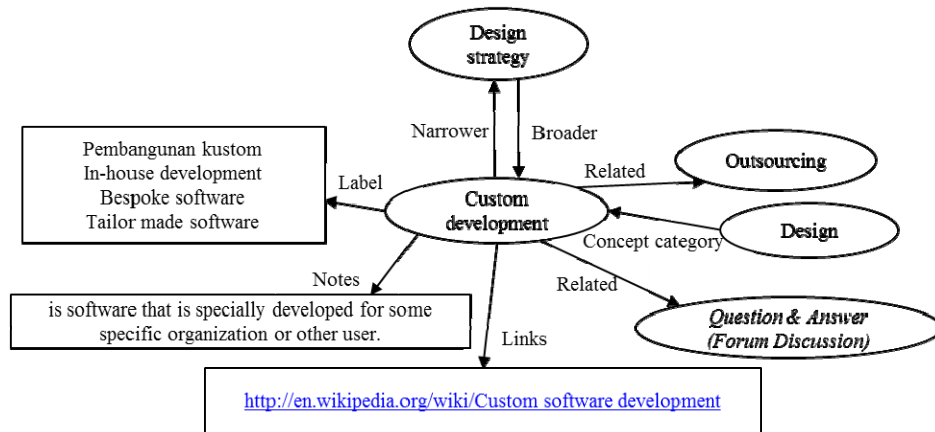


Figure 3: Example of a concepts and its relationship

The TopBraid Composer software as an ontology authoring tool illustrated in Figure 4 was used to encode the course knowledge in Web Ontology Language (OWL). OWL is a language developed by W3C for defining classes and properties. OWL can be used to explicitly represent the meanings of concepts in vocabularies and the relationships between those concepts. OWL represents those concepts in the form of triples representation (subject, property, object) as illustrated in Figure 5.

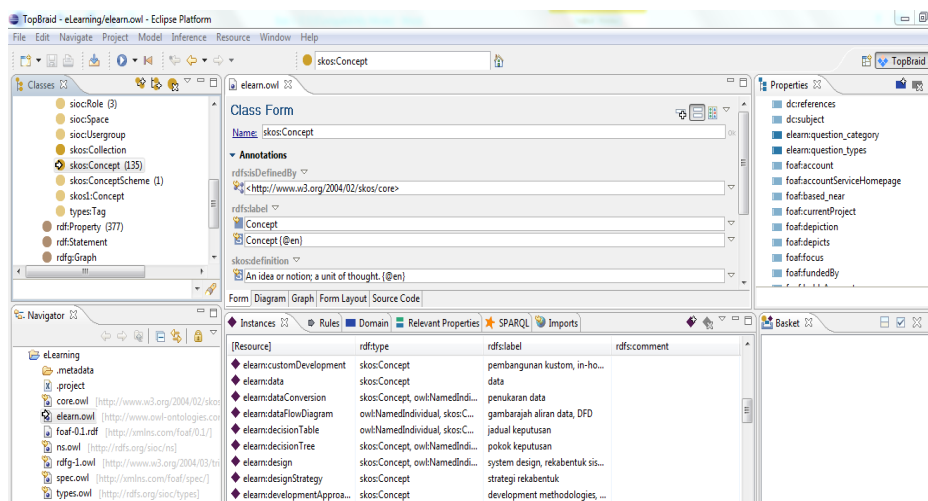


Figure 4: Ontology authoring tool

Subj	Prop	Obj
Uv::http://purl.org/dc/elements/1.1/description:	Uv::http://www.w3.org/1999/02/22-rdf-syntax-ns#type:	Uv::http://www.w3.org/2002/07/owl#AnnotationProperty:
Uv::http://purl.org/dc/elements/1.1/title:	Uv::http://www.w3.org/1999/02/22-rdf-syntax-ns#type:	Uv::http://www.w3.org/2002/07/owl#AnnotationProperty:
Uv::http://purl.org/dc/elements/1.1/date:	Uv::http://www.w3.org/1999/02/22-rdf-syntax-ns#type:	Uv::http://www.w3.org/2002/07/owl#AnnotationProperty:
Uv::http://www.w3.org/2000/01/rdf-schema#	Uv::http://www.w3.org/1999/02/22-rdf-syntax-ns#type:	Uv::http://www.w3.org/2002/07/owl#Class:
Uv::http://xmlns.com/foaf/0.1/LabelProperty:	Uv::http://www.w3.org/1999/02/22-rdf-syntax-ns#type:	Uv::http://www.w3.org/2000/01/rdf-schema#Class:
Uv::http://xmlns.com/foaf/0.1/LabelProperty:	Uv::http://www.w3.org/2003/06/sw-vocab-status/ns#t...	Lv:0::unstable:
Uv::http://xmlns.com/foaf/0.1/LabelProperty:	Uv::http://www.w3.org/2000/01/rdf-schema#label:	Lv:0::Label Property:
Uv::http://xmlns.com/foaf/0.1/LabelProperty:	Uv::http://www.w3.org/2000/01/rdf-schema#comment:	Lv:0::A foaf:LabelProperty is any RDF property with textual ...
Uv::http://xmlns.com/foaf/0.1/LabelProperty:	Uv::http://www.w3.org/1999/02/22-rdf-syntax-ns#type:	Uv::http://www.w3.org/2002/07/owl#Class:
Uv::http://xmlns.com/foaf/0.1/LabelProperty:	Uv::http://www.w3.org/2000/01/rdf-schema#isDefinedBy:	Uv::http://xmlns.com/foaf/0.1/:
Uv::http://xmlns.com/foaf/0.1/Person:	Uv::http://www.w3.org/1999/02/22-rdf-syntax-ns#type:	Uv::http://www.w3.org/2000/01/rdf-schema#Class:
Uv::http://xmlns.com/foaf/0.1/Person:	Uv::http://www.w3.org/2000/01/rdf-schema#label:	Lv:0::Person:
Uv::http://xmlns.com/foaf/0.1/Person:	Uv::http://www.w3.org/2000/01/rdf-schema#comment:	Lv:0::A person.:
Uv::http://xmlns.com/foaf/0.1/Person:	Uv::http://www.w3.org/2003/06/sw-vocab-status/ns#t...	Lv:0::stable:
Uv::http://xmlns.com/foaf/0.1/Agent:	Uv::http://www.w3.org/1999/02/22-rdf-syntax-ns#type:	Uv::http://www.w3.org/2002/07/owl#Class:
Uv::http://xmlns.com/foaf/0.1/Person:	Uv::http://www.w3.org/2000/01/rdf-schema#subClassOf:	Uv::http://xmlns.com/foaf/0.1/Agent:
Uv::http://www.w3.org/2000/10/swap/pim/c...	Uv::http://www.w3.org/1999/02/22-rdf-syntax-ns#type:	Uv::http://www.w3.org/2002/07/owl#Class:
Uv::http://www.w3.org/2000/10/swap/pim/c...	Uv::http://www.w3.org/2000/01/rdf-schema#label:	Lv:0::Person:
Uv::http://xmlns.com/foaf/0.1/Person:	Uv::http://www.w3.org/2000/01/rdf-schema#subClassOf:	Uv::http://www.w3.org/2000/10/swap/pim/contact#Person:
Uv::http://www.w3.org/2003/01/oeo/was84 ...	Uv::http://www.w3.org/1999/02/22-rdf-syntax-ns#type:	Uv::http://www.w3.org/2002/07/owl#Class:

Figure 5: Concepts in triples representation

Semantic Forum System

The process to capture knowledge from course module and forum discussion into ontological structure was carried out by knowledge engineer. This task require engineer to have appropriate ontological engineering method, languages and authoring tool background. In order for the ontological structure designed to be used, this study proposes a semantic forum system as a front end mechanism for learner to easily access, search and navigate the relevant knowledge of interest. The system introduces a new way of storing, organization, searching and exchange relevant concepts and discussions that able to facilitate the course to be reused, evolve and resolve learning difficulties. Thus, this section briefly discuss the system's facilities and its usage.

Figure 6 illustrates an interface that provides concept information details. The information includes: *concept relationships* section which can be narrower, broader or related concepts; notes section that provides notes taken from course module by such concept; *other* section: list of synonyms or alternative words in English or Malay language to be represented and link to Wikipedia or other sources that is relevant by such concept; and *related question* section that provides relevant questions and answers reused from several semesters of forum discussion collection. These details allow the course knowledge to evolve for further discussion, understanding and revision for current and future members of the learning community.

<p>Concept:</p> <p>Information System</p> <p><i>Narrower Concept:</i></p> <ol style="list-style-type: none"> 1. Development Approach 2. Project Management 3. Business Profile 4. Business Process 5. Information System Component 6. Business Model 	<p>Others:</p> <p>Label:</p> <ol style="list-style-type: none"> 1. Sistem maklumat 2. Data system <p>Links:</p> <ol style="list-style-type: none"> 1. http://en.wikipedia.org/wiki/Information_system
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Notes:

IS is a study that bridges business and computer science using the theoretical foundations of information and computation to study various business models and related algorithmic processes within a computer science discipline

IS is the study of hardware, software, data, process and human

Related Questions:

1. [What is system?](#)
2. [Describe information system and its components?](#)
3. [bolehkah berikan contoh? 1. Perkakasan input. 2. Perkakasan pemprosesan. 3. Perkakasan output. 4. Storan penyimpanan](#)
4. [Identify the main components of an information system.](#)

Figure 6: Example of concept detail interface

Figure 7 illustrates list of discussion questions organized under certain concept category. This concept category functions to represent the delivery sequence of the knowledge structure in the SAD course. Learner able to navigate from one question to another with additional information provided in the interface such as to which concept(s) the question belongs to, types, author and date and time the question posted. Upon selection from any of the question listed, several answers for such question are displayed as illustrated in Figure 8. In this interface learners have an option to add new answer for further choices of the answer or option to recommend whichever answer that best reflect their understanding. Meanwhile, Figure 9 illustrates concepts and relationships between the concepts using concept maps diagram. This initiatives contributes to reflect the essential aspects or the big picture of the course taught namely what is important and needs to be learned. The system also offer several types of searching facilities, such as searching for concepts, similar questions, unanswered questions, new questions, new answers, question types and recommended answers. Figure 10 illustrates search that driven by question types classification namely comparison, definition, example, clarification and verification. In the left side of the interface, learner do have option to choose several other types of searching facilities provided in the system.

Home Question & Answer Search Help				
Hi! Ahmad Sani [Sign Out]				
Concept Category				
Information System				
Planning				
Analysis				
Design				
Implementation				
Maintenance				
Object Oriented				
unCategorized				
Search for Similar Question:				
Search Clear New Question				
Concept Category: Planning				
Page [1 2 3]				
No	Question	Types	Author	Date/Time
1	Can you give example tangible and intangible benefit?(1) concept: intangible benefit,tangible benefit,	Example	Haizum binti hasbi	08-apr-2013 10:05 am
2	Why we need to conduct initial investigation?(1) concept: preliminary investigation,	Clarification	Julia bt bujang	06-feb-2013 12:06 pm
3	Can you discuss how to prioritize system request? tq guan(2) concept: system request,	Clarification	Mohd hisyamuddin bin abdul ghani	04-oct-2012 10:20 pm
4	Describe the differences between tangible and intangible benefits ?(2) concept: tangible benefit,intangible benefit,	Comparison	Handry bin mujih	04-oct-2012 10:04 pm
5	Can you elaborate about tangible benefit?(1) concept: tangible benefit,	Clarification	Mohd aidil bin suliman	03-oct-2012 09:57 pm
6	Apa sebenarnya yg dilakukan di dalam fasa perancangan(1) concept: planning	Clarification	Mohd aidil bin suliman	03-oct-2012 03:13 am

Figure 7: Example list of discussion questions interface

Question					Cancel
Question	Types	Author	Date/Time	Action	
Define system analysis? concept: analysis	Definition	Julia bt bujang [student]	16-jan-2009 11:33:00 am		
Answer					Add Answer
Answer	Author	Date/Time	Popularity	Recommend	Action
Systems analysis is the interdisciplinary part of science, dealing with analysis of sets of interacting or entities, the systems, often prior to their automation as computer systems, and the interactions within those systems.	Kwan yee boon [student]	16-jan-2009 03:22:24 pm		👍	
System analysis is the branch of electrical engineering that characterizes electrical systems and their properties. although many of the methods of system analysis can be applied to non-electrical systems, it is a subject often studied by electrical engineers because it has direct relevance to many other areas of their discipline, most notably signal processing and communication systems	Liew john seong [student]	16-jan-2009 07:07:51 pm		👍	
According to mcgraw-hill, systems analysis is (1) analyzing in detail the components and requirements of a system. (2) analyzing in detail the information needs of an organization, the characteristics and components of presently utilized information systems, and the functional requirements of proposed information systems.	Siti rohayah binti mohd. janis [student]	01-feb-2009 09:20:14 pm	👍 1	👍	
Analysis involved a detailed study of the current system, leading to specifications of a new system. analysis is a detailed study of various operations performed by a system and their	Liew john seong [student]	16-jan-2009 08:46:48 pm		👍	

Figure 8: Example of question and answer discussion interface

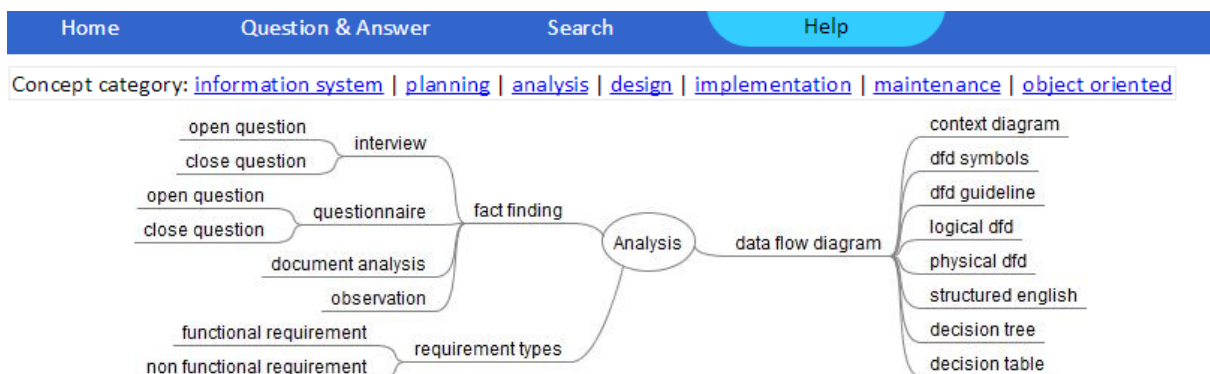


Figure 9: Example of concept map interface

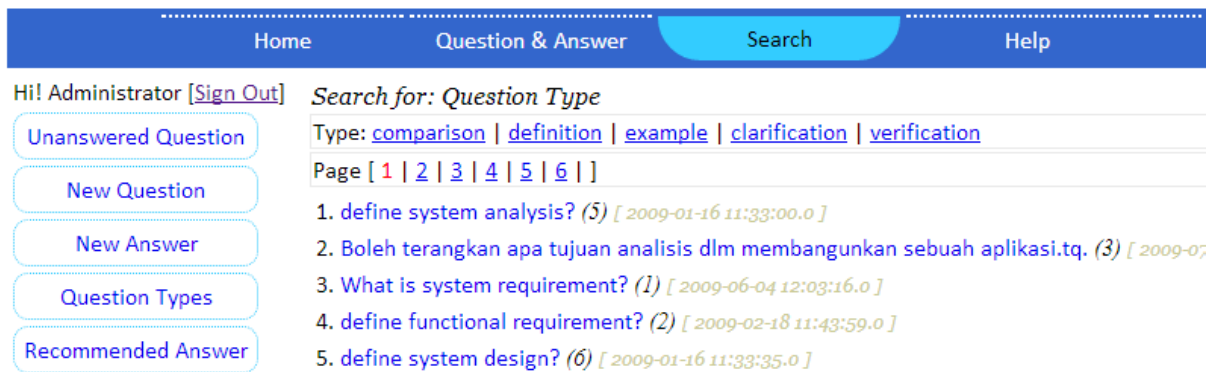


Figure 10: Example of question type search interface

Evaluation Results and Discussion

This section describes evaluation conducted from the proposed semantic forum system. Three dimensions were used to measure system effectiveness: learners' perceptions, system design perceptions, and system content perceptions (Holsapple & Lee-Post, 2006; Li, Dong, & Huang, 2009; Liaw, 2008; Ozkan & Koseler, 2009; Shee & Wang, 2008; Sun, Tsai, Finger, Chen, & Yeh, 2008; Y. S. Wang, Wang, & Shee, 2007), as described in Table 2.

Table 2: The Dimensions, Factors and Descriptions for the Evaluation

Dimensions	Factors
<i>Learners' perceptions</i>	<ul style="list-style-type: none"> • System value – <i>whether the system is a valued tool for learning</i> • System usefulness - <i>whether the system is useful for learning</i> • Ease of use - <i>whether the system is easy to use for learning</i> • Ease of understanding - <i>whether the system eases the learning process</i>
<i>System design perceptions</i>	<ul style="list-style-type: none"> • System search - <i>whether the provided search feature can fulfill learning needs</i> • System organization - <i>whether the system organized with the concept organization can enhance learning</i> • System navigation - <i>whether the system is easy to navigate for finding the required information</i>
<i>System content perceptions</i>	<ul style="list-style-type: none"> • Content availability - <i>whether the content is available to be used with a variety to be chosen from</i> • Quality content - <i>whether the content is easy to understand, clear, and relevant</i> • Useful content - <i>whether the content indicates what is important and needs to be learned</i>

These three dimension were tested with three postulated hypotheses:

H1: Learners' perceptions are positively related to the perceived effectiveness of the system in enhancing learners' understanding of the course.

H2: System design perceptions are positively related to the perceived effectiveness of the system in enhancing learners' understanding of the course.

H3: System content perceptions are positively related to the perceived effectiveness of the system in enhancing learners' understanding of the course.

Participants for the evaluation were limited to learners who had enrolled in the SAD course during a particular semester. This is justifiable, as the participants need to evaluate the system content based on the SAD course matter. The total target population size was 92 learners. However, only 74 online

learners responded to the close-ended online survey after their interactions with the system. This represented 80% response rate among the participants.

Evaluation Results

The results are presented in the form of descriptive statistics and multiple regression analysis. Based on the descriptive data for each dimension under study, the average mean value for the independent variables, namely, *learners' perception*, *system design perception*, and *system content perception dimension*, are 4.25, 4.24, and 4.06, respectively, and the mean value for the dependent variable, namely, *perceived effectiveness of the system* is 4.36.

A multiple regression analysis was carried out to examine hypotheses *H1*, *H2*, and *H3*. The results are presented in Table 3. This analysis was conducted to evaluate whether the independent variables (*learners' perception*, *system design perception*, and *system content perception*) are significant predictors of the criterion variable (*perceived effectiveness of the system*). Although past research has emphasized the perceptions of learners, design perceptions, and content perceptions as three important dimensions for evaluating system effectiveness, a hierarchical order of importance for these predictors has not been suggested. As such, the researcher chose to use the forced entry method to generate the regression model. In this method, all independent variables were entered into the model simultaneously.

The standardized beta value gives the relationship between the criterion variable and each predictor. The results in Table 3 show that the predictors have positive beta values indicating positive relationships. Thus, learners who have a positive learner's perception or a positive perception of the system design or system content or a combination of these will tend to have a positive perception of the effectiveness of the system. The beta value for learners' perception is 0.274, for system design perception it is 0.374, and for system content perception it is 0.302. In this model, all predictors made a statistically significant contribution, with learner's perception, $t(74) = 2.75$, $p < 0.05$, system design perception, $t(74) = 3.33$, $p < 0.05$, and system content perception, $t(74) = 3.16$, $p < 0.05$. The results indicate that system design perception made a greater contribution to perceptions of effectiveness than the other two predictors, with a higher t-value. Therefore, it can be concluded that learners positively perceive that the system design is the most effective criterion for enhancing their understanding of the course.

Table 3: Regression Analysis

	R	R ²	Adjusted R ²	Std. Error of the Estimate	
Model Summary	.874a	.764	.754	.235	
ANOVA^a model	Sum of Squares	df	Mean Square	F	Sig.
Regression	12.631	3	4.210	75.642	.000 ^b
Residual	3.896	70	.056		
Total	16.528	73			
Coefficients^a					
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Learners' perception	.340	.123	.274	2.758	.007
System design perception	.462	.138	.374	3.337	.001
System content perception	.405	.128	.302	3.169	.002
Notes: ^a Dependent variable: perceived effectiveness of the system. ^b Predictors: learner's perception, system design perception, system content perception					

Discussion

System design perception dimension measures searching, organization and navigation facilities of the semantic forum system. Results from a multiple regression analysis indicated that system design perception is the most important and highly significant predictor of the perceived effectiveness of the system, compared to the other two predictors. The results from the descriptive data also indicated a high mean value for each of the instrument factors. Thus, it can be concluded that facilities provided were positively accepted and effective to be used in enhancing learners' understanding of the course. This positive perception is justifiable with the new facilities designed offer an advantage to successfully ease the searching to filter out irrelevancies and ease the navigation especially when learning resource grows larger. The organization driven by concept relationships representation that concern to illustrates essential aspect of course taught crucial in enhancing the understanding process. This effort is consistent with previous research that emphasized on the importance to develop functions or facilities that able to increase learning effectiveness and meaningful learning experience (Laurillard et al., 2013; Song, Singleton, Hill, & Koh, 2004; W. T. Wang & Wang, 2009).

System content perception dimension measures the factors of content availability, quality and usefulness, was identified as the second most important predictor of the perceived effectiveness of the system. This was indicated with positive and significant results from multiple regression analysis. The positive perception is justifiable as learners were provided with course module and forum discussion content from current and previous semesters offer valuable advantage for immediate feedback and additional learning resources that will enhance their understanding. The effort to reuse forum knowledge able to assist learners in making sense or revising their understanding through the variety of available discussion. Furthermore the initiatives to provide content that only related to course matter able to increase learners concentration, accomplish the learning objectives and provide conducive learning environment.

Learners' perceptions dimension measures learners' perceptions of the system's value, its ease of use, the ease of understanding it, and its usefulness. This dimension was identified as the third important predictor of the perceived effectiveness of the system, indicated by the regression analysis result. This positive perception is important, as learners who place a high value on system designed are likely to invest more effort in learning, applying more elaborated learning strategies and devoting more time to learning (Nurmi & Aunola, 2005). Prior studies have considered positive learners' perceptions as contributing to the effectiveness of ODL application as well as to intentions to use the system (Holsapple & Lee-Post, 2006; Liaw, Huang, & Chen, 2007).

Conclusions

As learning resources continue to rapidly grow, so do expectations on ways to reuse these resources are becoming more important and critical to accommodate desirable learning outcome. Thus, this study contributes to introduce ontological structure representation in reusing the learning resources from course module and forum discussion. This representation is central to add meaning to the learning resource, indexed in such a way that it can be reused, searched, processed and shared the knowledge of interest. However, to make it accessible for the ontological structure designed, a semantic forum system is proposed as a front end mechanism in bringing the learning experience to the next level.

The proposed system is designed with concepts and relationships organization can be a valuable means to highlight the essential aspect of the course of what is important and need to be learned. The initiative to reuse these learning resources significant to enrich further learning and revision as well as fulfil learning needs with relevant learning resources. Furthermore, positive perceptions findings from the evaluation add in the value that the system with ontological structure is an effective learning system to enhance learners' understanding of the course taught. This study provides insights on new technology driven by ontological structure representation that can be used to further strengthen ODL

learning needs and outcome. Future research efforts for continuous learning enhancement are to deliver the system in a way that can matches the preferred learning style by varying the sequentialization of content elements or in a way that matches diverse teaching strategies such as game base learning, simulation, role playing and case study.

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THE USE OF INFORMATION AND COMMUNICATION TECHNOLOGY FOR BLENDED LEARNING AN EXPERIENCE OF HANOI OPEN UNIVERSITY

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Abstract

A bridge between the virtual and the live environments of learning has been made workable by the rapid development of technology over the last couple of decades; technology has made the possibilities for learning in the virtual environment become more like the face-to-face environment. The widespread availability of digital learning technologies has led to the integration of computer-mediated instruction elements with face-to-face learning experiences. The trend towards this blending of technologies and learning environments is becoming more common. The question is how to create the most effective mix of computer-mediated instruction and face-to-face instruction to offer the best of both worlds to today's learners. At Hanoi Open University, Open and Distance Learning is the backbone of its activities. Recently, blended learning has become a preferred mode of delivery for Open and Distance Learning courses at the university. Experiences of Hanoi Open University show that for blended learning to be successful, there should be a well-proportioned mix of asynchronous and synchronous interactions between the instructor and the learner. Also, there should be a supportive environment for the interaction among learners and for self-study of the learner.

Key words: *Asynchronous and synchronous interactions, blended learning, information and communication technology, open and distance learning*

Introduction

It is believed that the use of Information and Communication Technology (ICT) in education can help to improve learning outcomes and enable reform or better management of education systems. ICT presents enormous opportunities to rethink student support in ways that are not yet fully understood. Yet, despite decades of large investments in ICT to benefit education, data to support the perceived benefits from ICT are limited and evidence of effective impact is elusive or even debatable.

Experiences and lessons around the world reveal that the introduction of ICT in education in general and Open and Distance Learning (ODL) in particular is not a natural course, rather it is a course of will and determination. Successful application of ICT in ODL is a multi-faceted process, involving not only ICT. In fact, ICT is the easiest part; other parts such as curriculum designing, teacher training, policy making, financing...are more difficult to address.

As a leading provider of ODL in Vietnam, Hanoi Open University (HOU) has invested heavily in ICT with a hope to improve the learning outcomes of the learner and facilitate the teaching and learning process. Recently, blended learning (BL) has become a preferred option of the university in delivering ODL courses. So far these courses have proved to be a success of the university. This paper discusses the advantages of blended learning and identifies key success factors in blended learning at HOU.

Blended Learning

The traditional model of teaching and learning in a university setting involves the learner and the teacher showing up at the same time in a designated classroom. This is a face to face (F2F) learning environment. The teacher talks and the learner takes notes. Research has shown that this model is one of the least effective means of delivery (Fink, 2003).

As educational institutions seek to improve teaching, the focus has evolved to become improving learning. This shift is described by Barr and Tagg (1995) as a change from the “Instruction Paradigm” to the “Learning Paradigm” (Figure 1). The Instruction Paradigm defines learning as a passive event – the learner is fed information by the teacher. The Learning Paradigm forces learners to be active discoverers and constructors of their own knowledge and reality. Educational institutions in this learning paradigm no longer offer courses and programs, but instead are the hotbed of creative and powerful learning environments. Teachers become the designers of learning environments.

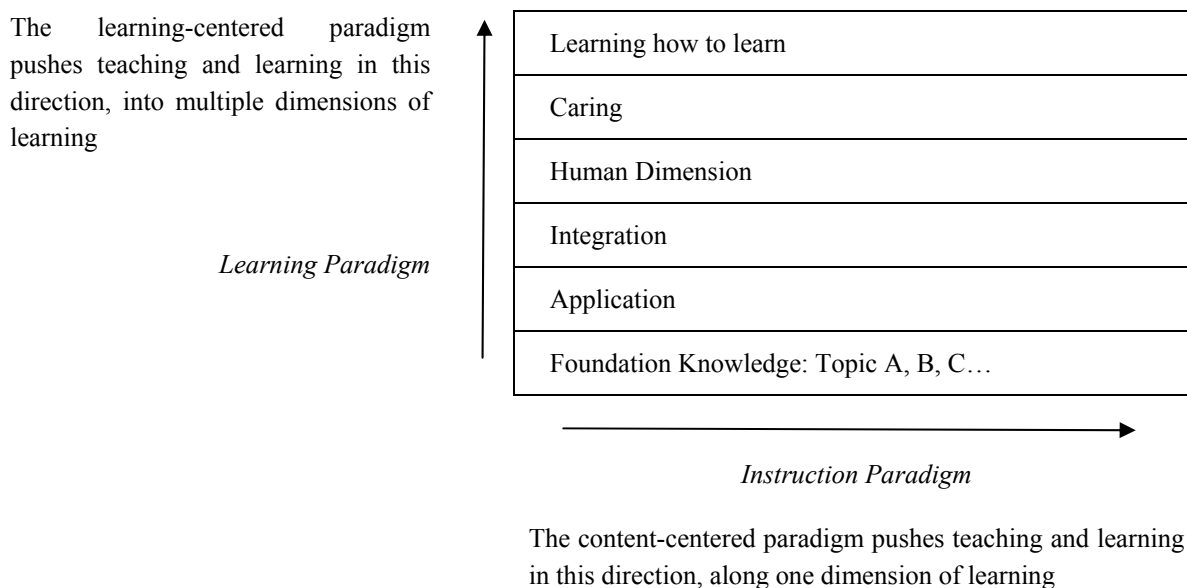


Figure 1: The effects of two different paradigms
Source: Fink, 2003

Reevaluating what goes on in a classroom has also forced educators to evaluate where learning should take place. Despite the perceived value of online instruction, it is not a panacea. The social connection that the learner seeks may not be obvious on an online environment. Many researchers argue that learning takes place most effectively in a collaborative learning environment – typically a F2F environment.

Social constructivism theory describes a way of knowing in which learners construct their new understanding and knowledge during the process of social interaction with others. Vgotsky, the main architect of social constructivism, states that with interaction and help from more knowledgeable peers, one could develop more profound comprehension than his/her individual capacity. The Zone of Proximal Development (Vgotsky, 1978) can best be understood as a bridge between knowledge that a learner cannot learn on his/her own, but can learn with the assistance and guidance of a teacher or other learners (Figure 2).

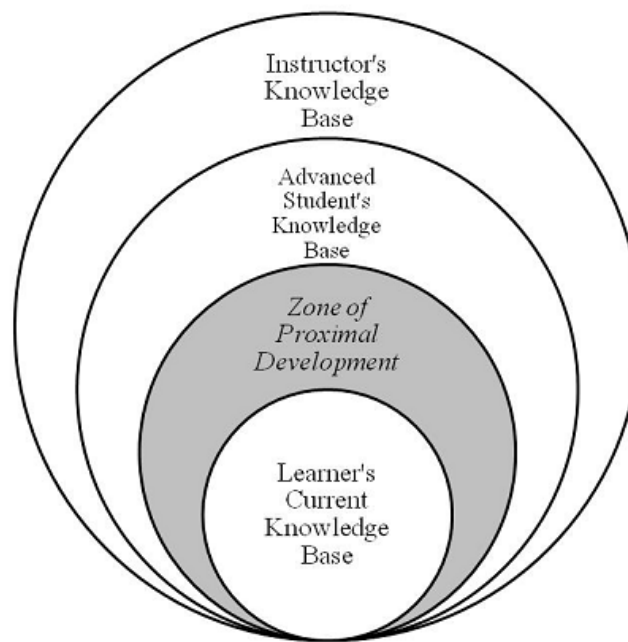


Figure 2: The Zone of Proximal Development
Source: Vgotsky, 1978

It is obvious that the F2F environment can offer human-human interaction that many experts believe is integral to learning. Significant guidance from more knowledgeable peers or experts is believed to elevate student abilities within the Zone of Proximal Development and is known as scaffolding. According to social constructivism, learning occurs when students share background information and participate in collaborative and cooperative activities; while students are negotiating the meaning, they are constructing their own knowledge (Wink & Putney, 2002).

Although social constructivism has typically been thought of as a F2F mechanism, there is no reason why it cannot take place in other learning environments (Sthapornnanon et al, 2009). An online setting allows the teacher to consistently embed social constructivism into the learning process. Figure 3 below shows the four critical dimensions of interaction that occur in F2F and online learning situations. Face-to-face learning has typically taken place in an instructor-directed, live, synchronous, high-fidelity environment. Distance learning so far has emphasized self-paced learning that occurs in an asynchronous low-fidelity environment.

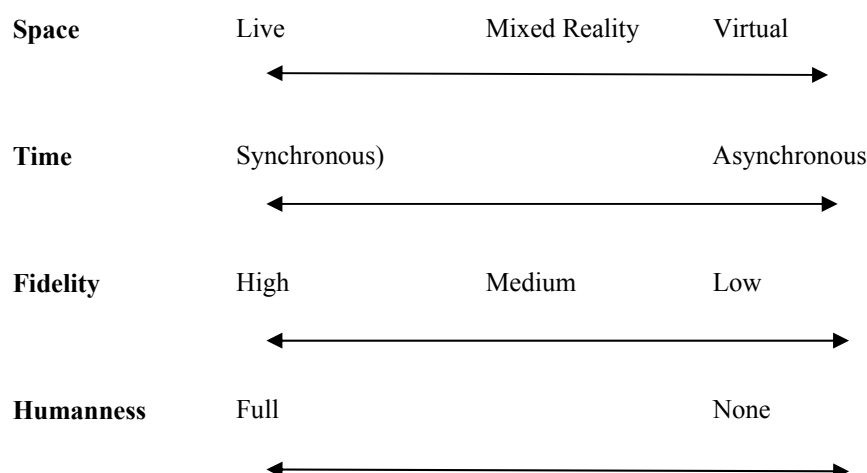


Figure 3: Spectrum of Learning Environments
Source: Bonk & Graham, 2006

The two distinct learning environments in the past were separate entities because they used different methods of transmission and served different audiences. A bridge between the virtual and the live environment has been made workable by the rapid development of technology over the last couple of decades. These technologies have made the possibilities for learning in the distributed environment become more like the F2F environment (Osguthorpe & Graham, 2003). Communication technologies allow learners and instructors to have synchronous interactions in real time with close to the same levels of fidelity as the F2F environment. The widespread availability of digital learning technologies has led to the integration of computer-mediated instruction (CMI) elements with F2F learning experiences. The trend towards this blending of technologies and learning environments is becoming more and more common (Sancho et al., 2006). The question is not whether blending is happening or necessary, but how to create the most effective mix of CMI and F2F instruction to offer the best of both worlds to today's learner.

Typically, BL makes extensive use of learning technologies through the blending of physical and virtual environments in order to supplement traditional F2F learning (Bersin, 2004). A wide variety of BL models are described in the literature (Bonk & Graham, 2006), ranging from supplementing the F2F learning process with online materials, as in most traditional universities to conducting the learning via a learning management system (LMS) supplemented by a few F2F orientation meetings. This latter approach is common in most open or distance universities (Guri & Rosenblit, 2005).

Blended Learning – An Experience of Hanoi Open University

Since the birth of HOU with its first ODL courses in cooperation with VOV, the Voice of Vietnam, the ODL network of HOU has expanded nationwide with 84 satellite centers. Currently, there are two major types of ODL courses at HOU, “Traditional Distance” courses and “Elearning” courses.

Traditional distance courses are based on learning materials packages and tutorials, delivered at satellite centers. HOU has invested heavily on the development of such learning materials packages and tutorials. These have been useful for not HOU but also for its partners and other universities. There are also F2F classes available at satellite centers. For these classes, HOU mobilizes local lecturers to reduce the cost and also to “socialize” this type of education, which at the time being seems to be the most suitable for most ODL learners.

Beside this “traditional” type of ODL delivery, in 2008 HOU started Elearning courses, which are delivered mostly on the Internet. For the implementation of these courses, HOU established an Elearning system. The most prominent feature of this system is it can incorporate various types of learning and teaching technologies and materials on an online environment.

To enhance the quality of ODL courses and to take advantages of ICT, recently the university has paid more attention to BL courses. These BL courses have proved to be a success at the university. A course that is highly appreciated by the Ministry of Education and Training (MOET) of Vietnam is the English course designed to enhance the language skills of English teachers at Continuous Training Centers in the North of Vietnam.

The total time allocation for the course is 400 hours, of which F2F delivery accounts for 100 hours and online delivery accounts for 300 hours. Face to face delivery is divided into two phases, one at the beginning and the other at the end of the course, and is used mainly for class organization, basic ICT training, instructions to the websites designed specifically for the course, basic language skills instructions, administration of tests, and social events (Appendix 1). Online delivery is divided into two components: synchronous classes and asynchronous classes. Synchronous (real-time, virtual) classes are used mostly for practicing language skills (reading, writing, speaking and listening), and asynchronous classes are used mostly for exercises and self-study, delivered mainly via email and the websites (Appendix 2).

To facilitate BL classes, the university designed two specific websites, one for delivering real-time classes, uploading learning materials, managing learning forums, sending and receiving emails, and the management of classes, and the other is mainly for self-study. Each student is given an account and is required to access electronic lectures and do the related exercises on the websites. The progress and the results are automatically reported to the students, the teachers, the mentors and the class managers.

To increase access of learners to the Internet, the university allows learners to access the labs with networked computers at its central campus during the F2F phases. For the online phase, learners can borrow laptops from the university.

Regarding the content of the course, 80% of the content is fixed; the other 20% is flexible, depending on the “negotiations” between lecturers and learners.

To further facilitate the learning process, classes are divided into groups, and a mentor (an English teacher at the university) is assigned to each group. These mentors have access to the accounts of the students. Their main tasks are to help them with group discussions, give them advice in their study, and remind them of the exercises unfinished.

So far, for classes that have already finished, end-of-course tests showed great progress of the learners and end-of-course surveys showed high satisfaction of the learners and also of the teachers.

Thus, experiences from these classes show that for blended learning classes to be successful, there should be a well-proportioned mix of face to face delivery and online delivery, specific websites for both synchronous and asynchronous interactions, training in relevant ICT skills for the learner, easy access of the learner to the Internet, flexible learning content, and a network of mentoring.

Conclusions

Successful application of ICT in ODL is a multi-faceted process, involving not only ICT. ICTs can bring about convergence between traditional educational models and alternative models and can provide a more integrated and seamless vision of learning venues and opportunities as they can eliminate geographic barriers only if a receptive and conducive environment policy and implementation environment exists.

The widespread availability of digital learning technologies has led to the integration of computer-mediated instruction elements with face to face learning experiences. The trend towards this blending of technologies and learning environments is becoming more and more common. The question is how to create the most effective mix of computer-mediated instruction and face to face instruction to offer the best of both worlds to today’s learner.

Experiences from Hanoi Open University show that for blended learning classes to be successful, there should be a well-proportioned mix of face to face delivery and online delivery, specific websites for both synchronous and asynchronous interactions, training in relevant ICT skills for the learner, easy access of the learner to the Internet, flexible learning content, and a network of mentoring.

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Appendix 1

Time table for face to face classes, phase 1, week 1

Mon	Morning	Opening Ceremony + Organization of Classes
	Afternoon	Placement Test
Tue	Morning	Grammar + Vocabulary
	Afternoon	Listening + Speaking
Wed	Morning	Extra activities
	Afternoon	Report (in group)
Thur	Morning	Grammar + Vocabulary
	Afternoon	Reading + Writing
Fri	Morning	Grammar + Vocabulary
	Afternoon	Listening + Speaking
Saturday	Morning	ICT in Use
	Afternoon	ICT in Use

Appendix 2

Time table for online classes, phase 2, week 1

Mon	Introduction to the Website hoc123.com	
Tue	Reading +Writing	
Wed	<i>Hand in Mini Test for Reading Writing</i>	
Thur	Speaking+Listening	
Fri	<i>Hand in Mini Test for Speaking+Listening</i>	
Sat	<i>Exercises on the web hoc123.com</i>	
Sun	<i>Hand in Progress Tests</i>	<i>Grammar+Vocabulary</i>
		<i>Reading+Writing</i>
		<i>Speaking+Listening</i>

Notes:

- * Classes for the modules in **Bold** are delivered online, in real time.
- * The doing of exercises on the web will be logged and the results will be sent automatically to the students, the teachers, the mentors, and the class managers.
- * The handing in and out of Mini Tests and Progress Tests will be via email.

THE DESIGN, DEVELOPMENT AND LEARNING SUPPORT OF A LEARNING MANAGEMENT SYSTEM FOR ODL

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Abstract

With the increasing importance of open and distance learning (ODL) in realizing life-long learning, many institutions of higher learning have placed greater emphasis on the development and employment of effective learning management systems. Nevertheless, it appears that very few institutions of higher learning have invested in developing their own learning management systems. My Virtual Learning Environment (myVLE) is OUM's own proprietary web-based learning management system. The design and development was the effort from OUM's internal development team comprising the academics, the instructional designers and the programmers. It was specifically designed and developed to serve as a one-stop learning platform that provides all learning and facilitation and administrative services to the learner, face-to-face tutors, online tutors and also the staff, both academic and administrative. In the developmental process, various factors have been taken into consideration to ensure that myVLE functions as a personalized learning environment that is customized to meet the various learning needs of ODL learners. One of the efforts is the development of a standalone Computer Based Training (CBT) courseware to guide and support the use of myVLE. The paper seeks to present to the readers a clear picture of myVLE and the roles it plays in OUM's implementation of ODL to its large number of learners who are vastly distributed within and outside the country. The paper discusses in detail the rationale and objectives for myVLE development; the design principles of myVLE; the framework and key features of myVLE; as well as the justifications for the inclusion of those features. It also highlights the key features and use of the CBT courseware. Finally, the paper touches on future enhancement plans of myVLE and how these are aligned to OUM's future vision and direction.

Introduction

21st Century is characterized by massive information explosion and shortening of knowledge life-cycle. The rapid growth and wide dissimulation of both true and false information over the internet constitute information pollution. This, coupled with the shortening knowledge life-cycle makes continuous learning, unlearning and re-learning not just a choice but a necessity for every individual to survive well in the digital age. In short, life-long learning is the way forward in the digital age. Adult learners who belong to the working class now have to constantly equip themselves with relevant knowledge and skills to keep abreast with the changing demands and needs of the job market. However, due to their inability to adhere to regular and fixed learning time and learning place, adult learners may find ODL a better alternative to fulfilling their learning needs. It needs however to be highlighted that in order to facilitate smooth and effective education delivery in the ODL environment which is characterized by the wide distribution of learners in terms of locality, there is probably a need for institutions of higher learning to invest in a quality web-based learning management system (LMS) that is able to facilitate and support learning effectively. In fact, it seems that most institutions of higher learning in Malaysia are already aware of the needs and have utilized some form of LMS to support their students' learning. Nonetheless, many of these higher institutions of learning, particularly the traditional universities, appear to utilize third-party or open-source LMS to provide some learning support to their learners. For many of these institutions, the roles of the LMS are just surrogate in nature. It appears that very few institutions have invested in developing their own learning management system.

Open University Malaysia (OUM) is a private ODL institution of higher learning in Malaysia. It started its operation in the year 2001 with only 753 learners but has rapidly grown into the leading ODL in Malaysia with an accumulated population of more than 150,000 learners. To provide learners with an effective learning environment, OUM has invested a great deal in developing and enhancing OUM's proprietary web-based learning management system, myVLE an acronym of My Virtual Learning Environment.

This paper seeks to present to the readers a thorough view of myVLE and the roles it plays in OUM's implementation of ODL to its large number of learners who are widely distributed within and outside the country. The paper discusses in detail the rationale and objectives for myVLE development; the design principles of myVLE; the framework and key features of myVLE; as well as the justifications for the inclusion of those features. It also describes the key-features of a computer-based training (CBT) courseware highlights which was developed internally to support and guide learners on the use of myVLE. Finally, the paper touches on future enhancement plans of myVLE and how these are aligned to OUM's future vision and direction.

Learning Management Systems (LMS)

Learning management systems have become the generic platform for housing online courses and components. It is the infrastructure that delivers and manages instructional content, identifies and assesses individual and organizational learning or training goals, tracks the progress towards meeting those goals, and collects and presents data for supervising the learning process of an organization as a whole (Szabo & Flesher, 2002). LMS also enables and supports interactions between students and instructors as well as among students (West, Waddoups, & Graham, 2007). Studies on interactions have shown that increased interactions improve students' achievements and attitudes towards learning (Stanberry, 2000)

Since its early development in the 1990's, learning management systems have continued to evolve. Learning management system providers are competing to serve clients with the best system that include the necessary e-learning tools to facilitate teaching and learning. Institutions seek systems that incorporate tools for active learning online and students are engaged in their learning. The appropriate use of suitable online learning tools helps to drive passive learners' active learning. Having such a system or environment will enrich students' learning experiences, and this is consistent with the constructivist approach to learning (Gillani 2000; Jonassen 1995; Jonassen & Land 2000; Relan & Gillani 1996). Some of the well-known major platforms such as Moodle, WebCT, and Blackboard are being used by many top ranked institutions and colleges. For example MIT, Monash University, Australian National University, Open University United Kingdom, Notre Dame College and Athabasca University Canada are among many that have adopted Moodle, while John Hopkins University, Duke University, and Princeton University use Blackboard.

In general all learning management systems provide similar basic features and tools. A good LMS will be able to provide features that suit the requirements and needs of the institution. OUM requires an LMS that can serve as a one-stop center. The system not only provides a platform for learning but also allows the University to manage and monitor the quality of tutoring and learning. Through the use of such an LMS, OUM learners can easily access their courses, learning resources, discussion forums, profiles, grades, digital library and university services. In addition to that, the University management is able to carry out learners' evaluations of their courses and online facilitators. Facilitators or tutors can also access the courses, discussion forums, use chat functions, share useful resources and facilitate learning for large groups of learners. On the system administration part, administrators can upload and update content and resources, track and monitor learners and facilitators as well as online activities that take place within the system. Furthermore, OUM requires an LMS that can be linked to its campus database system, *i-Campus*.

Principles and myVLE Design

myVLE is one of the tools used by OUM in realizing the government's vision to achieve a knowledge-based society via life-long learning. myVLE as an LMS, is much more than just a repository of learning materials. In fact, it is a one-stop all-in-one personalized learning environment that promotes constructive learning. OUM's myVLE serves as an excellent system that frees the adults from the constraints of having to learn at specific place and at specific time. The use of the myVLE system enables any institution to free from the constraint of learning space. With the use of the system, there is virtually no limit to the number of learners that the institution can enroll.

Currently, most institutions other than OUM employ third-party generic learning management systems to provide learning support. Those systems only manage learning resources, learning materials and online forum discussions but are not tailored made to meeting specific needs of any one institution. Most institutions that use such systems only use them to provide supplementary learning support. But the design and development of myVLE was with the aim of making it a one-stop-integrated learning system that serves not only the learners but also the people who manages online and distance learning. Besides its main function as a one-stop learning platform, it also allows learners to carry out activities like registration and selection of courses, assignment management and submission, digital library access, online learning support system access and many others. To increase the efficiency of access, myVLE is designed in such a way that the digital learning modules are broken down into organized byte-size parts to speedup downloading. To provide just-in-time support when a learner has some questions to ask while browse-learning the modules, the system provides appropriate links to enable learners to post their questions to the eForum anytime they wish to, without having to exit from their modules. To remind learners of their learning progress, the system also allows the learners to "track" their learning. In this way, learners would be well-informed of how much that they have learned.

myVLE Framework and Feature

MyVLE was built using LAMP architecture. It has four open-source components: the Linux operating system, the Apache HTTP Server, the MySQL relational database management system (RDBMS), and the PHP programming language. It comprises Linux as the server operating system, Apache as the web server (Apache, 2005), MySQL (2005) as a database backend and PHP scripting language. MyVLE also uses Zend Framework, an open source, object oriented web application framework for PHP 5. It should be noted that with very little configuration the completed MyVLE was later successfully run on a Windows NT server. The forum support was provided through the reuse of an open source project phpBB (2005). In addition for software of this scale and complexity, version, code control and bug tracking are of paramount importance.

Being a one-stop center, learners are able to log into myVLE to:

- view and download learning resources
- participate in online discussions
- view transcripts;
- view course grades;
- register & add/drop courses; and
- download and submit assignments online, to be graded online by e-graders.

Figure 1, 2, 3 and 4 are various shots of myVLE system interface.

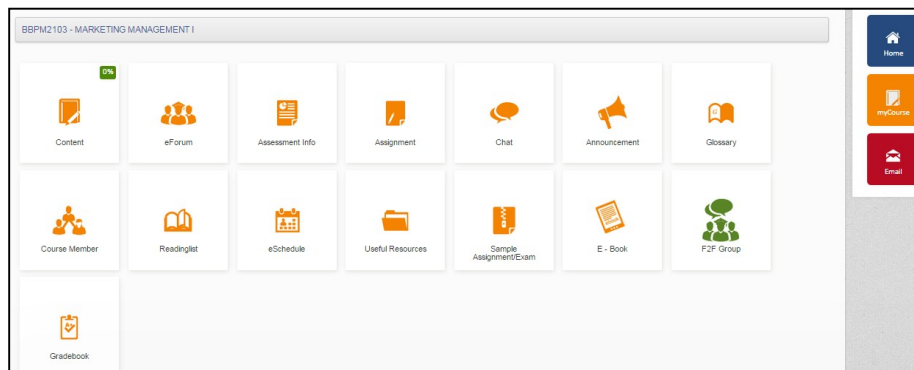


Figure 1: A screenshot of a Course Page

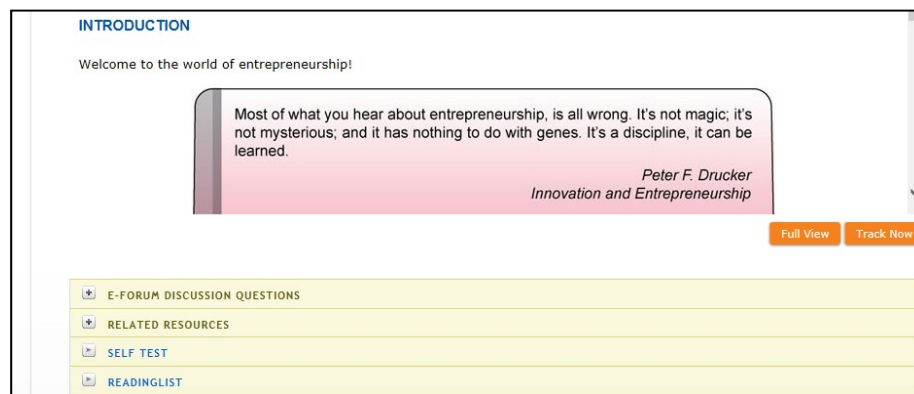


Figure 2: A screenshot of a Content Page

OPEN UNIVERSITY MALAYSIA		Student ID	: CGS12345XXXX
		Name	: FAZIA ROMMEL
Biodata Major/Minor Credit Transfer Registered Course Examination Academic Progress Transcript Financial Previous			
Student's Detail			
Name	:	FAZIA ROMMEL	
Student ID	:	CGS12345XXXX	
NRIC/Passport No	:	1234567890	
Programme	:	MASTER OF EDUCATION	
Faculty	:	FACULTY OF EDUCATION AND LANGUAGES	
ULC	:	PETRAKLARNING CENTER	
Personal Particulars Address Emergency Contact Beneficiary Education Background			
Date of Birth (DD-MM-YYYY)	:	17-04-1992	Citizenship : MALAYSIAN
Gender	:	FEMALE	Race : *** Please select race ***
Religion	:	OTHERS	Marital Status : OTHERS
<input type="button" value="Save & Next"/>			
<p>Note : Click the Amend button for any amendments. Your amended profile will be updated within 3 working days. Kindly be informed that you must complete all the info and click the declaration at Emergency Contact.</p>			

Figure 3: A screenshot of a Student Profile Page

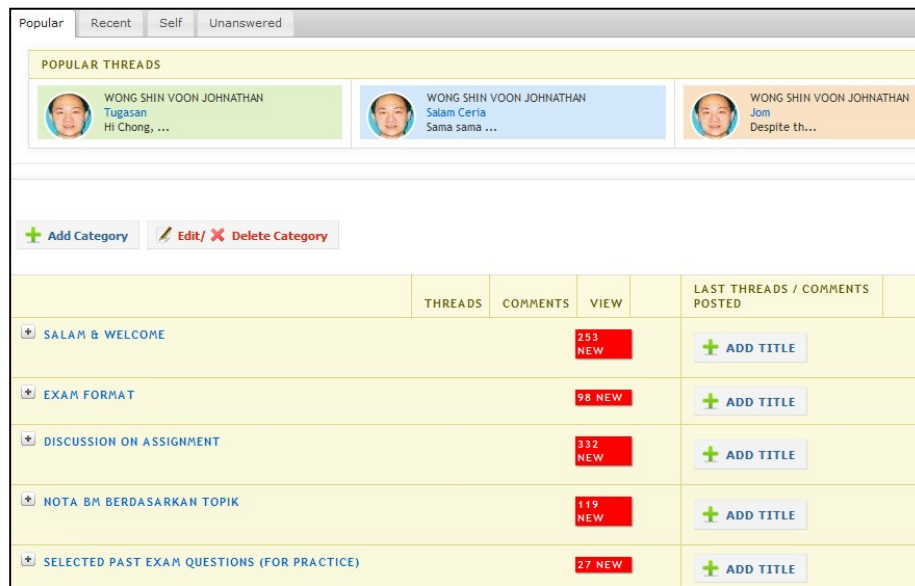


Figure 4: A screenshot of an Online Discussion Page

To enable the effective management of tutors and e-tutors, a LET (learners' evaluation of tutors) is incorporated into myVLE. The inclusion of this system is necessary for two main reasons. The first reason is that OUMs' tutors are vast and widely distributed. It is not possible to monitor every tutoring activity by performing actual classroom observation. The second reason is that since students are basically the main sources of information about the teaching abilities of their lecturers (Aleamoni, 1981), it is certainly necessary to gather feedbacks from students regarding their teachers. In the case of OUM, evaluations are carried out on tutors and online facilitators via myVLE. LET is a system in myVLE that can also analyze the feedbacks provided by the learners on their tutors or e-tutors on the following aspects:

- pedagogical skills,
- attitude, and
- knowledge.

The LET system also enables tutors or e-tutors to view and compare their performance against the other tutors via myVLE. Another innovative solution incorporated into myVLE is the use of i-FEED system. The i-FEED system is an intelligent feedback system that is available 24hours. The system responds to questions from learners that are related to the contents of the course module. Through myVLE learners can also access OUM's Math Resources Center (MRC) and OUM's English Language learning portal, e-GATE. The MRC provides support and resources for learners who need help with math, while the e-GATE provides support for learners who need to polish their English Language skills.

In the development of myVLE, the development team has taken steps to ensure that the system complies with the SCORM standard. myVLE was developed in-house, initially intended to cater for to the growing number of learners who are vastly distributed. In view of the large number of users, both in and outside the country, the development team has taken some positive steps to further enhance the system:

- The breaking down of interactive digital modules into manageable parts
- The inclusion of various supplementary learning materials at appropriate to cater for learners of varying learning styles

- The development of CBT courseware to guide the use of myVLE for learners who are less techno-savvy, and also for tutors and e-Tutors who are not able to attend face-to-face training.

Prior to the development of the CBT courseware, OUM has invested heavily on the training for tutor/eTutors to ensure that they are able to optimize myVLE to support learners' learning. As for learners, they were only provided with some guides on the use of the learning system. The development of the CBT courseware reduces greatly the cost for training.

The wide application of the system is an indication of practicability. At the recent "Educating Online in Asia" Workshop for Higher Education Policy Makers and Practitioners" (at Renaissance Hotel, Kuala Lumpur, 5-7 May 2015) organised by the Department of Education and Training, Australian Government, a paper on OUM's online learning initiative was presented and following that, the issues paper prepared by Australian High Commission reports specifically on the following key features of myVLE:

- Faster access
- Easy navigation
- The ability to track learning
- Integrate forum posting and learning
- Repository of forum discussion
- Interactive self-test

This indicates to a certain extent that the presentation on myVLE has gained some recognition from professionals from other countries. Today, more and more institutions of higher learning are looking for ways and means to involve learners in meaningful online learning. Any institution which wishes to conduct effective online learning courses needs a good online learning system. Such a system is certainly more than just a standard learning management system. This is more so for institutions which aim towards offering fully online courses to adult learners who are probably so vastly distributed and who have time constraint in attending scheduled face-to-face classes. Our target market is not confined to institutions within the country but we are also looking at institutions from abroad.

A good system frees the education provider as well as the learners from the constraints of time and place. Besides the education sector, we also see another great potential of myVLE: it can be used as a platform for business corporations to run online on-the-job training programmes for their staff. In this way, the staff can undergo training from time to time without the need to leave the job. Using the system, institutions of higher learning can conduct training and provide learning remotely. This means that such institutions can enrol learners from anywhere in the world. Similarly, business corporations with branches in different places can also conduct training programmes in a cost effective manner. In fact, a number of OUM International partners have purchased and adopted myVLE to provide online learning to their learners. The increasing number of such overseas partners strongly indicates that their confidence in the product for implementing effective online learning.

CBT Courseware for myVLE

OUM's practice in Self-Managed Learning is well inculcated throughout the usage of myVLE via the myVLE Learning Courseware. Students are encouraged to explore myVLE on their own and download the courseware as a guide. The use of the courseware promotes self-paced learning. According to Dhanjal & Calis (1999), self-paced learning eliminates the need for group instruction and scheduling. This in turn provides flexibility in training and cost effectiveness in training the masses. The courseware is an interactive and interesting way of learning on how to use myVLE. The

supporting CBT standalone courseware was built using Macromedia Authorware. Figure 5 shows the starting screen of myVLE CBT training courseware. Figure 6 and Figure 7 are some interface screenshots of the CBT courseware.



Figure 5: The starting screen of myVLE learning CBT courseware

Each menu listed in the screen shot above will provide learners, Tutors and Facilitators with information relating to the usage of myVLE icons and how to perform certain tasks in myVLE.

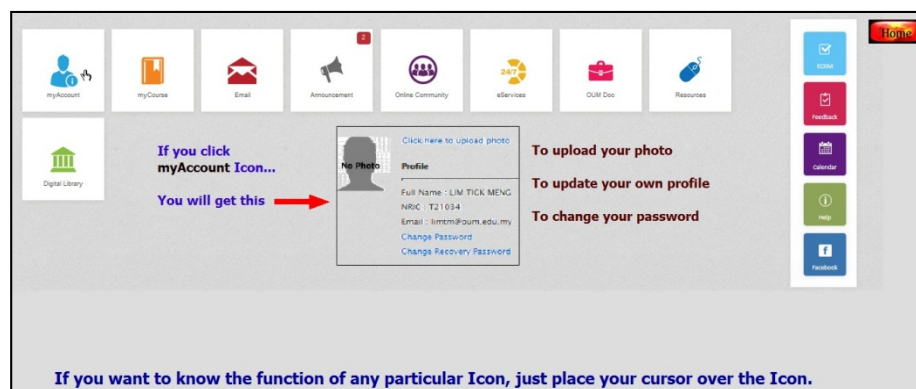


Figure 6: A screenshot of myVLE learning CBT courseware

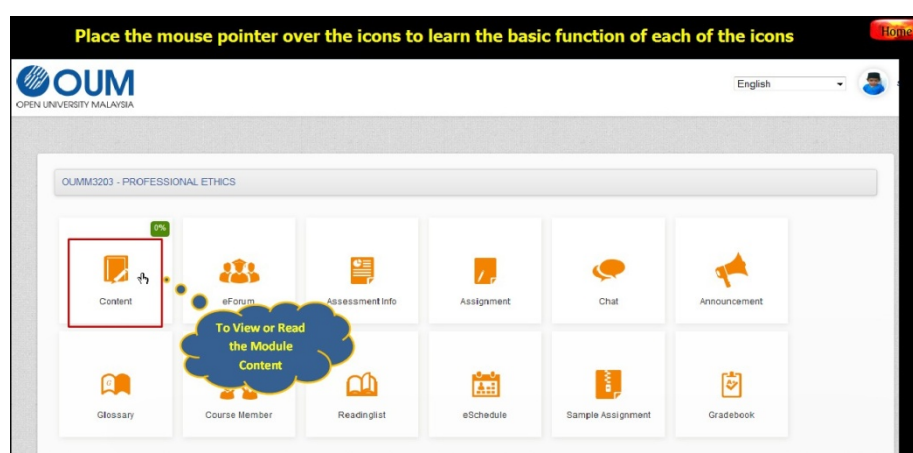


Figure 7: A screenshot of myVLE learning CBT courseware

As an illustration of the functionality of the CBT courseware, the CBT includes a menu page to enable learners learn some important steps of processes by exploring the “How to” menu page (Figure 8). Users may choose to view the graphic illustration of the steps or watch the video embedded with voice instructions).

Click any icon under "READ ANSWER" or "WATCH VIDEO" to learn the process

NO	HOW DO I ...	READ ANSWER	WATCH VIDEO
1	View or Read module content?		
2	View or download assignment task?		
3	Submit my assignment online?		
4	Participate in the discussion forum?		
5	Track my learning progress in myVLE?		

Figure 8: A screenshot of myVLE learning CBT courseware

The myVLE e-learning platform and myVLE learning courseware at OUM are both developed, deployed and enhanced progressively by OUM's internal ICT developers, academicians and support staff. Their expertise and dedication have made it possible for the platform and courseware to provide excellent Teaching and Learning support, as well as other Support services for OUM users (Learners, Tutors, Facilitators and Staff) around the clock, from any location in the world via the Internet connectivity.

With a large number of users (over 30000 active learners, 4500 part-time academic, 800 faculty and staff), it is a challenge to train the users on the use of OUM myVLE. The standalone CBT courseware was developed for the purpose of helping the users in becoming familiar with the new platform and getting to know on how to use and navigate in myVLE. The courseware is made available to all users through myVLE. Users just need to download the courseware once, and it can be accessed offline anytime and as many times needed. The new myVLE interface is icon-based, and therefore navigation is intuitive. Yet it is useful to have the courseware, for users to learn the "how to" in performing tasks in myVLE.

Planning for Future Direction

As an effort to remain competitive, the enhancement of myVLE and the supplementary CBT courseware at OUM is a continuous in-house development process. The development team has set out some strategies and to further improve the system. Some of the enhancement initiatives in process are:

- Development of a device-agnostic and fully personalised learning app version of myVLE to be run seamlessly on any mobile devices
- The use of learning analytics to create learner advisory system and to provide non-linear varied learning paths for the learners

OUM places the quality of learning and learning support as its top priority. OUM realises with the rapid evolvement of technology, changes in many areas are inevitable. These include OUM's learning management system, myVLE. It is certain that myVLE will evolve with time, when the need to do so arises.

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THE EFFECTIVENESS OF THE ONLINE CONVERSION STRATEGY OF THE OPEN UNIVERSITY OF SRI LANKA; WHAT, HOW AND WHY?

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Abstract

The Third Corporate Plan of The Open University of Sri Lanka (2011-2016) specifically referred to creating a cost effective educational platform via online conversion under its Goal No 1& 3. The strategies adopted to achieve these goals included providing (a) infrastructure facilities, (b) training programmes to academic staff, (b) an incentive mechanism to those involved in Web-based delivery and (c) monitoring the progress of online conversion at all levels of the university by offering guidelines, mechanisms and technical assistance for online development and delivery of study materials. Assessing the performance of online conversion process this paper identifies constraints encountered by teachers and proposes methodological and institutional strategies to overcome the difficulties.

Introduction

Online education is no longer a novel idea. Online technology has facilitated teaching and learning via a combination of options to offer new opportunities for students including better access to resources, increased interaction between staff and students and greater flexibility in place and time (Ko & Rossen, 2010). However, the transition to online teaching and learning presents new challenges owing to change of expectations and roles to both staff and students (Ibid, 2010). The role of online teacher is different and comprises of pedagogical, facilitator, instructional designer, social and technical facets (Berge, 1995; Anderson et. al 2001). This means that in an online environment, instructors should be knowledgeable about both the course content and delivery technologies which intern place a heavy demand on instructor time (Haugen, LaBarre & Melrose, 2001). Therefore planning online programmes and strategizing them carefully are fundamental to its success. Supporting teachers engaged in the process of pedagogical inquiry and problem solving, online technologies and pedagogical methods within their unique teaching context make it all more challenging (Barren, Correa & Thompson, 2011).

The early initiatives of the Open University of Sri Lanka (OUSL) to go online commenced with the Capacity Enhancement (OUSL-CE) component of the Asian Development Bank (ADB) assisted Distance Education Modernization Project (DEMP) in 2003/2004. One of its primary aims is to establish structures and mechanisms to develop and deliver online courses with a view to expand the outreach of Open & Distance Learning (ODL) facilities to cover the entire country.

Moving the OUSL towards offering courses via online, OUSL-CE project introduced standards and guidelines for online development and how they should function. Facilitating a gradual move from a basic course to full online course delivery, a mixed media approach was used, and initially three types of online courses were developed: supplemental, blended, and online plus courses. The operational definitions used by the DEMP (2008) are as follows:

- Supplemental –providing online communication between faculty and students as well as access to course material/supplementary material

- Blended – taking advantage of educational technology and 20 % of assessment activities occur online or are based upon online content
- Online Plus (Fully online) – using advanced technology and methods for a full online collaborative course delivery experience.

Table 1 gives the number of different types of courses offered at OUSL from the inception of OUSL-CE project. The first set of 33 supplementary courses was offered at the end of 2007/08 academic year via the ‘Moodle’ Learning Management System (LMS). By the end of 2013/14 academic year there were 198 courses on delivery, and out of that three were fully online courses, whereas the rest were blended (12) and supplemental (173) courses. The academic year 2014/15 is still continues, and there are 187 courses offered so far. It is apparent that there is a slight increase in the number of blended online courses in the current academic year than in the previous years.

Table 1: OUSL Moodle Online Courses Offered from 2007-2015

Academic Year	Fully Online	Blended	Supplemental	Total
1. 2007/2008	2	0	31	33
2. 2008/2009	2	8	48	50
3. 2009/2010	2	2	64	68
4. 2010/2011	4	15	71	85
5. 2011/2012	2	16	103	121
6. 2012/2013	0	16	114	130
7. 2013/2014	3	12	173	198
8. 2014/2015	2	21	164	187

Source: OUSL–CETMe statistics (Sept. 2015)

After the completion of the DEMP project, the Centre for Education Technology and Media (CETMe) of OUSL continued to train OUSL academics in online conversion through Moodle LMS, and by the end of 2014 about 145 academics received training under this initiative (Table 2).

Table 2: The Progress of Training Academics at OUSL

Year	No. of academics trained by CETMe
2008 January	26
2008 April	20
2008 November	15
2011 January	20
2012 April	12
2012 May	10
2013 January	14
2013 May	16
2014 February	12
Total	145

Source: OUSL–CETMe statistics

Table 2 shows the number of academic staff trained by the CETMe. The average number of academics trained remained around 16 per batch while there has not been an increase in the number of academics trained despite the pronounced statements in the Corporate Plan of the University. Of course during 2008-2010 period, the main focus of the DEMP was to revise its existing course materials. Consequently teachers in general spend most of their time on course revision than online conversion. The low enrolment of teachers to the training programmes would partly be attributed to this ambiguity.

As reported in the progress evaluation reports of the DEMP (2008) *‘a number of issues were identified in the design and development of the online courses using the initial model approved by the University. While the overall design and development process proved to be inefficient in some ways the instructional design coordinator role of academics was too demanding due to the multiple roles they have been called upon to play as course developers, coordinators, teachers, contact points of students etc., There existed systemic loopholes of understaffing and the lack of commitment among the staff responsible for multimedia development and web Moodle developing etc., resulting in further delays’* (DEMP, 2008).

Objectives

This study was undertaken in 2013 to ascertain the progress of the online conversion of the OUSL and to identify the constraints faced, and propose methodological and institutional strategies to overcome the difficulties if any encountered by the academia.

Methods

The study employed a strategy combining both qualitative and quantitative data collection methods; the qualitative data came from Focus Group Discussions (FGDs) and in depth interviews with a few key informants. Five FGDs were conducted with an average group size of six persons selected from the four faculties and the Post Graduate institute of English (PGIE) of the OUSL. The FGD participants consisted of those who underwent training and involved in developing online materials. Their insights and experiences were found worthy of documenting for future reference. Each discussion continued for about 75 -120 minutes, and all were recorded with the permission of the FGD members.

The quantitative data collection was conducted using a questionnaire. The sample size was 75 academic staff members out of a total of 300, exclusive of those who took part in the FGDs (30); the respondents were briefed about the study prior to the administration of the questionnaire. Only fifty six (56) of the academics responded. Data analysis was based on descriptive statistics entirely because of the smallness of the sample.

Frequencies were computed for quantitative data, and content analysis was carried out for qualitative data. Triangulation of research findings from the two data collection options was used to reinforce the findings of the study.

Results and Discussion

Characteristics of the Sample in Relation to Online Conversion

Sample (of the questionnaire survey) consisted of twenty-one (21) male and thirty five (35) female academics. They were in the age range between less than 25 to more than 56 (Table 3); they represented all four faculties, i.e., the Faculty of Humanities 10, Natural Science 22, Engineering Technology 16, Education 7, and Regional Educational Services-1.

Table 3: Age Range Structure of the Sample

25- 30 yrs	31- 35 yrs	(iv) 36-40 yrs	(v) 41 – 45 yrs	(vi) 46- 50 yrs	(vii) 51-55 yrs	(viii) 56> yrs
8	8	7	4	9	10	10

Quite contrary to the popular belief, age was not a barrier to online conversion. This conclusion is drawn from the fact that the sample consisted of those who underwent training courses and those who have made some attempts to produce web-base course materials. It appears that older academics have been more inclined to adapt new technology than those who fall within the middle age groups. Naturally young academics are more technology savvy. However, it is difficult to understand why those within 36-45 age cohorts are unenthusiastic towards the use of new technology.

According to quantitative data, 90% of these academics were computer literate and most of them had uninterrupted access to computers; including a) those having a desktop in their own rooms at the OUSL, b) private computers including laptops. Those who did not have private access (10%) use computers at the computer lab or common machines in their own work stations. This would mean that infra-structure was well in place as an outcome of the DEMP project that equipped the university with desktop computers. Almost all of them had access to (95%) internet connections through the OUSL's internet facility while some academics also used private arrangements of dongles to facilitate internet access.

The usage of computers and internet were quite extensive according to the survey findings. Almost (98%) academics are using the computer always (68%) while another segment reported everyday (30%). The most commonly used service was e-mail service (93%) and word processing and statistical analysis for research work (92%). Searching for web learning resources (85%), and lesson writing (66%) also was found notable. Thus the extent of involvement appeared reasonably high among the group of academics interviewed.

Great majority of academics who responded (90%) are offering at least one supplemental course while only few academics offered blended or online plus courses. About 10% of those who did not offer online courses gave following reasons to justify their non-compliance in offering an online course (Table 4).

Table 4: Reasons Preventing Academics to Offer Online Courses

Reasons	Percentage
1. I am not trained	6%
2. I am too old to learn new technology	1%
3. It need extra time to prepare online courses and I don't have it	6%
4. Online mode is not familiar to students	6%
5. I know that students prefer course books and face to face options more	8%
6. Students doesn't seem to be interested in online materials	3%
7. Some of my students don't have access to internet facilities / computers	9%

The table above outlines seven factors that discourage the academics from using online conversion. Very broadly these factors can be divided into two sub-groups. The first set of reasons (1-3) deals with the incapacity of the respondents which may be due to lack of training and time, and old age.

The second set of reasons from 4-7 covers their perceptions on lack of preference of students to learn online. These perceptions appear to look more like wishy-washy excuses to impair project on online conversion. Many of those who avert online conversion want to ascribe their inability or unwillingness using excuses that students do not want it or students are unable to follow online materials.

The following anecdotes (Table 5) spell-out the other side of the story of those who are willingly using online methodology. They opined that online materials are more effective as they augment the learning process.

Table 5: Main Purposes for Which the Online Courses are Used

Reasons	Percentage
1. Improves the capacity to give quick and effective feedback	82%
2. Makes it easy to insert additional study materials (including PowerPoint presentations) for learners to read online	82%
3. Facilitates inclusion of new course information available online -	80%
4. Provides links to new web resources	79%
5. Makes it easy to upload all assignments / examiners comments after evaluation	73%
6. Allows inclusion of past examination papers (OBT/NBT and final papers) and model papers available online	66%
7. Engages students with subject related discussions	59%
8. Conducts interactive self learning quizzes for students	55%
9. Makes it easy for students to submit assignments on time	49%
10. Enables conducting online assessments	43%
11. Facilitates conducting in-depth discussions with students for a longer period that is difficult otherwise.	34%

Of the eleven reasons listed above, four (4) are assigned almost 80 percent value while another five has closer or more than 50 percent value. This means that the reasons are strong and associations may be significant. There are many others giving other reasons outlining the advantages of online conversion to teachers and learners both. It is considered that this data set is more authentic as they are based on the tested and proven experiences of the respondents.

The study revealed a mixture of reasons that stimulated the respondents to initiate online conversion of study materials (Table 6). There is an overlap between these reasons and the factors discussed in Table 5 above. According to Table 6 it was found that one of the highest valued comments (66%) was based on the policy of the Department or Faculty to which they belong.

Table 6: Factors of Motivation to Offer an Online Course

Reason	Percentage
1. It is the policy of the Faculty/Department	66%
2. It is a way out to send multimedia content	66%
3. Same material can be reused easily	61%
4. It is very flexible	59%
5. It is more efficient	54%
6. It improves contact time with students	52%
7. I have seen it working elsewhere	48%
8. It is trendy	45%
9. Online exams can be conducted	41%
10. My friends encouraged me	18%

Interest in Teaching Online

Academics who were interested / very interested in teaching online formed 65% of the number of respondents. There was another category of 27 % who seemed to be grudgingly involved in the online conversion owing to pressure from their superiors and co-workers (Table 7).

Table 7: Interest in Teaching Online

(i) Not interested	(ii) Some-what interested	(iii) Interested	(iv) Very interested
2%	27%	45%	20%

Those who were interested in online conversion further revealed that the following factors have made them interested in teaching / offering online courses;

Table 8: Major Reasons for Offering/Teaching in Online Courses

Reasons	Percentage
1. My personal motivation to use improved technology in teaching	91%
2. Teaching online adds to my overall job satisfaction	89%
3. It is an academic challenge	86%
4. I can work at anytime from anywhere	86%
5. For self satisfaction	83%
6. Online courses give optimal teaching conditions	77%
7. It makes my teaching easy	77%
8. It makes learning for students fast and easy	77%
9. It gives me prompt feedback from learners	77%

In contrast, those who were not interested/ somewhat interested in teaching online gave the following reasons for their lack of interest:

Table 9: Major Reasons for the Lack of Interest Offering/Teaching in Online Courses

Reasons	Percentage
1. Lack of time to engage in developing online courses	100%
2. Students are not interested in online learning	76%
3. Worried about the increased workload	70%
4. My Subject is difficult to teach online	66%
5. Online course adds additional work load/pressure	65%
6. No support from my superiors in the department/ faculty	41%

The above group has a set of reasons that the frequently used against online conversion and teaching. Other than the avowed reasons to reject online teaching they have revealed two other new aspects, i.e., (a) my subject is difficult to teach and b) my superiors do not support online teaching which must be studied further.

Recognition

When academics were asked whether they were given due recognition to offer online courses at institutional level, majority (70%) affirmed while another 21% disagreed. Those who disagreed stated following reasons for their dissatisfaction:

Table 10: Reasons for the Dissatisfaction Regarding Due Recognition

Reasons	Percentage
1. No payment mechanism for marking online scripts	100%
2. Lack of financial incentives for those who develop/offer online courses	92%
3. Not having a streamline mode of recruit and payment system for external online tutors	92%
4. Lack of recognition for promotions	83%
5. Lack of recognition by academic administration (Heads/ Deans/Vice Chancellor)	66%

Some of the above reasons appeared to be valid although most teachers did not want to discuss them openly. There is a genuine discontentment as those staff members who are engaged in the traditional ODL mode enjoy a financial reward mechanism which was not available for online teachers. This is despite the fact that online teaching is lot more demanding than the traditional mode of teaching. An example would be the payment for marking scripts where some anomalies exist and the university authorities have been postponing possible solution.

Support to Develop Online Courses

Questionnaire results revealed that 80% of academics agree that they receive adequate encouragement to develop online courses at the Faculty level, while 16% disagreeing to the same fact. The respondents noted that their immediate superiors like the Head of Department have provided support to teach in online courses in different levels as listed as follows:

Table 11: Support Given by the Immediate Superiors (Deans/Heads)

(a) Not at all	(b) Some-what	(c) Average support	(d) Good support	(e) Very good support
5%	13%	24%	33%	23%

It was also confirmed that self motivation to develop/ offer an online course was the main motive force (73%) for those who have ventured into online teaching. The other forces include inspirations given by the Head of department, (61%) or the Dean of the faculty (48%). Some teachers indicated that they were inspired by their peers (43%).

Training Received on Online Course Design and Development

Majority (75%) of the participants in their responses to the questionnaire stated that they participated in training sessions on online course design and development, while another 25% did not undergo such training. Majority were trained by the CETMe (57%) while others got their training from OUSL-CE (10%) or DEMP (7%). Some others stated that they were self-learners (25%). The respondents appear to be contented about the substance, presentation and usefulness of the training programmes. Out of those who received training, 88% stated that the training motivated them to offer an online course.

Table 12: Benefits of the Training Programmes

Benefits	Percentage
1. Received adequate skills to develop online courses	91%
2. Learned new pedagogical methods to deliver the subject matter better than earlier	88%
3. Felt that they could support students in different ways using online courses	88%
4. Training opened up their minds to think differently to offer courses in a better way	79%
5. Technical facilities available in the LMS motivated them to develop the course	62%

The above list spells out the benefits of the CETMe initiatives concerning the training programmes in particular. However, it is difficult to find comparable data on different training programmes offered by the other providers like OUSL-CE and DEMP. It does not mean that they are necessarily inferior. Rather that all three different training sources cannot be considered under the same umbrella particularly with respect to their benefits. Another additional issue surfaced during the FGD was that there has not been an attempt to formally evaluate the post training experience of trainees. Associated with this is the absence of retaining or refresher courses that will help to repeat some of the technical aspects that may have forgotten by the trainees.

Quality Assurance Mechanism of Online Courses

Academics participated in the questionnaire confirmed (90%) that the review process to assure standards of online courses before delivery (quality assurance) although 4% of the respondents disagreed. Some of the benefits of quality checks as identified by the respondents included;

- *Maintains the standard of courses and helps the 'novice' to improve quality, maintain uniformity and streamline the course. They however, said that 'CETMe, should not comment on the academic standards of products. There was also a suggestion that making annual reviews may be useful especially to make random checks and review to make sure that the products conform to the required guidelines.*
- *It is always good to have feedback and improve continuously*
- *The review process helps to obtain the views of an expert*

As reported by one member *'I learnt to design and develop the course based on the feedbacks that I got after the review process of my initial course'.* Another member opined that *'It maintains the standard of the course and this support is really required and appreciated'.*

Constraints

Questionnaire results also revealed that inadequate infrastructure such as computers, software, bandwidth in the internet connection (66%) and lack of system reliability to access online courses (59%) as the main constraints to offer online courses. This was interesting in a context where there was a marked improvement in the access to computers in the auspices of the DEMP project. However, computers without the supportive elements such as uninterrupted web access and adequate bandwidth have created relentless discontentment among the staff. It was also revealed that these deficiencies have frustrated the dependability of online learning.

Another major drawback according to the respondents was about the LMS 1.8 version of Moodle. Most academics (52%) showed their dissatisfaction of this version while about 28% were contented about it. Specific problems encountered by the respondents included a) access problem (71%), b) getting students onboard (55%), c) lack of time to frequently login (52%), d) lack of acknowledgment to their commitment (34%) and absence of updating courses (29%). These comments were reinforced

by the comments received in the FGD. The following statements denote some of the stark problems faced by the online teachers;

One teacher suggested that *'email notifications option is not functional. Therefore each forum needs to be checked for any student feedbacks'* while another was even more cynical *'1.8 is a prehistoric dinosaur! It doesn't support typing equations and I am trying to teach mathematics on it! (many other functions are missing)'*. Other drawbacks included *'uploading of voiced PowerPoints was not possible as only 2MB uploading size was permitted; uploading PowerPoints with figurs, videos, animations are not possible.'* while yet another teacher commented that *'I am not satisfied with the security of the system to conduct online tests, access takes a long time at work – because of this usually attend to my online course at home'*.

During FGDs it was reiterated that technical loopholes such as the bandwidth and server problems plus perceived security concerns related to online examinations must be urgently addressed if the university wants to make any headway in the online conversion process. There was a suggestion that views of academics and students alike must be sought if the university is dedicated to online conversion process.

The respondents also indicated that the decision taken by the university council (2013) to make all courses be presented online by 2016 requires a thorough examination and more sophisticated planning effort. Such an effort necessarily involves the community of academia that is responsible for online conversion work and its implementation. However, it appears that the university council has not anticipated these requirements when this decision was made. In fact the FGD also showed that all courses may never be able to make online. Other concerns expressed by the respondents included the ability of all students to comprehend materials in English and productively engaged in an online learning when their language ability is weak. This may lead to problems of undermining equity which is one of the major goals of the university vision in the Corporate Plan, 2011-2016 (OUSL, 2011). They argued that *'the biggest drawback to popularizing online courses is the language and the ability to read and write in English. Not all Sri Lankan students, unlike foreign students in English speaking countries, can use "chatty" online'* *'Of course, we could develop courses and questions for which pre-coded answers are given (like MCQs) but by doing this their thinking power and imaginations are stifled'*.

Another valid point that was raised in the FGD was the shortage of staff to help online conversion *'if arrangements can be made to help us even at the revision and updating stages it would be appreciated'*. This point related to the severe shortage of staff at the CETMe to facilitate online conversion process on time. The trainees could not contact the two members of training at the CETMe for assistance. It was abundantly clear that these two trainers were involved in a) training, b) quality assurance, c) monitoring the progress, d) research and many other work formally and informally assigned to them by the University. The training section thus showed a clear case of 'over-trading' and 'over-stretching'.

The Benefits of Online Teaching

Despite all these problems, respondents still believe that online conversion is still advantageous. This is an encouraging sign. Some of the major comments includes a) It adds to my professional development-89%, b) It strengthens the learning process of students -82% c) It enables me to conduct ODL/Online learning research – 59%, d) It helps me to collaborate with other institutions to jointly offer courses- 48%.

These comments show that there is an implicit assumption that online conversion is advantageous to learners, teachers and the institution in different ways. The respondents naturally are concerned about their private gratification as well as the organizational benefits. This is natural. The university has to make its reward system to tap this latent potential.

Conclusion

Although there has been a progress in the OUSL-online conversion exercise whether it reached the expected objectives is open to discussion. Of course there have been some positive outcomes where both learners and teachers have shown a strong involvement in the use of new technology of programme development and delivery. This was not necessarily in terms of absolute number of courses offered, or students registered with online delivery, but more in terms of quality of involvement and commitment to on-line conversion strategy. It was found that those who were committed to online conversion continuously improve their products with new changes, additions and improvements; besides they have been maintaining strong relationship with their students via a feedback process. These improvements apart, there has also been some signs of frustration among the teachers, users and administrators of online delivery.

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INVESTIGATE ON COMPUTER SOFTWARE SKILLS OF SECONDARY SCHOOL TEACHERS WHO UNDERGONE INTERNATIONAL COMPUTER DRIVING LICENSE (ICDL) TRAINING

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Abstract

As one approach to ensure that teachers have the necessary fundamental skills to support Information and Communication Technology (ICT) instruction in primary and secondary schools in Sri Lanka is to require International Computer Driving License (ICDL) training and certification the ministry of Education in Sri Lanka urges all teachers to receive ICDL training regardless of the subject they teach. ICDL is known as international standard which enables people to show their capabilities in performing computer skills. It is indicated that some investigation must be performed to evaluate the software ICT skills of secondary schools teachers who were undergone in ICDL training. The researcher used a purposive sampling method to select 85 teachers who followed ICDL training in Badulla district. From the selected sample of 85 teachers, 50 of them had undergone Post Graduate Diploma in Education (PGDE) training through open and distance mode at Open University of Sri Lanka (OUSL) and the other 35 teachers currently following PGDE at OUSL. Methodologically, the study followed Quantitative and Qualitative research techniques including questionnaires, observation and interviews. Quantitative techniques such as percentages, tables and charts were used to analyze data. And qualitative techniques also used for data analysis. The findings revealed that a high number of ICDL participants were competent in basic skills related to ICDL software applications while only a minority of the participants competent in advanced skills. However, the findings revealed that those who had prior knowledge in certain area in ICT skills with regard to different software applications were more competent after ICDL training in those skills. The findings revealed that the average number of teachers were moderate competent in skills related to ICDL software applications in ICDL training. Sinhala and Tamil medium teachers had substantially lower levels of competence in middle order and advanced skills related to ICDL software applications while English medium teachers had a substantially high level of competence in middle order and advanced skills related to ICDL software applications. The findings of this study led to the conclusion that the ICDL modules cannot be used for complete IT literacy because of the failure to incorporate critical thinking and advanced skills related to different software applications.

Key Words: Information communication and technology, computer and training

Introduction

Technology changes every life style and human activity to become fast, global, and time-critical. The computer facilitates speedy access to useful information. Social, global, cultural, and educational competitiveness are influenced by educational technologies that positively affect style, duration and method of learning for groups and individuals. Technology impacts where we learn. Distance learning in homes, offices, and libraries complement classical learning in classrooms (Clark, 2001). Distance educators refer to three distinct applications of computers in the off-campus study environment: Computer Managed Instruction, Computer Aided Learning, and Computer Conferencing (İşman, Fahme, Altınay and Altınay, 2004). Computer Managed Instruction facilitates management and administration of the learning process. It provides opportunities for electronic counselling of students, on-line registration, institutional record keeping, evaluation, and tracking student progress. Computer Aided Learning includes software applications to teach students different subjects and concepts through pre-structured and programmed materials. Courseware either replaces or supplements material that students are expected to learn through other media (print, video, audio cassette). Lesson formats range from tutorials to simulations. Students can also

use Internet resources for exploration and research. Computer Conferencing uses the electronic network to enable individuals to communicate via computers at the same time (synchronous) or delayed time (asynchronous), either as a group or between two individuals. Typical formats include email, bulletin board, threaded discussion, net meeting (with the possibility of audio, video, and shared “blackboard” displays), and databases.

It has become mandatory that the teaching community acquire expertise in the computer to ensure that they cope effectively with the future demands of the knowledge society with respect to the class room set up. Hence, the Sri Lankan education system has adopted several ICT training courses aimed at improving the use of including International Computer Driving Licensee (ICDL) in the classroom. The ICDL, which is known as the European Computer Driving License (ECDL) within the European Union, is a certification attesting to basic proficiency in the use of certain types of software or computer systems (Csapo, 2002). The Ministry of Education of Sri Lanka urges all teachers to receive ICDL training and to apply for certification regardless of the subject they teach in school. The Ministry of Education considers the ICDL training an effective in-service training approach that allows teachers to acquire fundamental ICT skills. The course aims to improve teachers’ ICT proficiency at three levels: ICT skills, pedagogical skills, and curriculum training. Sinhala, Tamil and English medium schools teachers in Badulla district in Sri Lanka have been given ICDL training without any discrimination in every year by Ministry of Education. Among who had undergone ICDL training in Badulla district there are teachers who had undergone Post Graduate Diploma in Education (PGDE) training through open and distance mode at Open University of Sri Lanka (OUSL).

Objective of the Study

It is found that most of teachers including teachers who engage in ODL mode in Badulla district still do not use computer technology for their teaching, learning process and their personal use while they were trained in ICDL. In this regard it is important to assess whether the ICDL training was effective in improving ICT competencies and ICT skills relating ICDL software applications of Sri Lankan teachers. So this study examines whether ICDL training increased teachers’ professional, ICT and pedagogical skills in their day to day teaching and learning process.

Research Questions

1. Whether the ICDL training increased teachers’ professional, ICT and pedagogical skills in their day to day teaching and learning process
2. How far the ICDL training increased teachers’ basic ICT skills related to ICDL Software applications? If increased, how they use those skills in their teaching and learning process?
3. How far the ICDL training increased teachers’ middle order ICT skills related to ICDL Software applications? If increased, how they use those skills in their teaching and learning process?
4. How far the ICDL training increased teachers’ advance ICT skills related to ICDL Software applications? If increased, how they use those skills in their teaching and learning process?

Significance of the Study

Today, successful educational organizations insist on quantitative goals, capacity creation and higher professional skills for human resources at all level. Unavoidably, the existence and destiny of an educational organization is threatened if training of employees is neglected.

Thus, since it is essential that all employees of educational organization get familiar with computer science and information technology especially who continue their studies in ODL mode. It covers only very short periods of nearly eight years – (from 2006) since the teachers were given training in ICDL by the Ministry of Education Sri Lanka. Therefore, in such time that Ministry of Education made arrangements to trained school teachers in ICDL aimed at the improvement of teachers' use of ICT in the classroom, research on improving ICT competencies and ICT skills relating ICDL software applications need of the education field.

The findings may also have significance for the organizations involved with developing courseware and providing training by finding the effectiveness of present ICDL training for meeting the requirements of the education profession. The results of the study may have significance for teachers taking the ICDL course as in-service training program by finding the effectiveness of the training for meeting individual ICT aims.

Literature Review

According to Willis and Mehlinger (1996) teachers' professional development in IT may be shifting toward using computers to more effectively to support instructional goals and away from computer literacy skills. 2000 public school teachers had trained in the previous year on one or more of three topics: the mechanics of using IT, integrating computers into instructional activities in their subject, and /or using the Internet. However, such training tended to be brief rather than sustained. Third grade teachers with different characteristics and at different kinds of schools differed little or not at all in their confidence about using computers for instruction, whereas in the past, veteran teachers more often assessed their computer knowledge as lacking compared with that of their junior colleagues. The more confident third grade teachers assigned their students computer and Internet more often than did other teachers.

In qualitative research examining the effectiveness of ICT training using CDROMs with a modular learning approach to provide instruction to users outside the educational environment, Dillon and Tearle (1999) found that outcomes depended on the content of the training modules, the methods of presentation, and the degree of prior computer knowledge of the learner. Maximum effectiveness in terms of knowledge acquisition occurred when the content of the training was related to a specific objective the learner perceived as useful, such as a task to which the knowledge could be applied. This finding conforms to the general theories of adult learning in which the learner is motivated to obtain knowledge for specific purposes. The findings also indicated that the learners had variable motivations depending on the content of the modules. These findings imply that the most effective ICT training provides motivation to learners by demonstrating the utility of the ICT knowledge rather than treating the learning solely as an academic exercise.

Randall and Zirkle (2005) suggested that additional vendor-specific training might be required after obtaining ECDL/ICDL certification because the certification does not encompass many task-specific skills. The general implication of the literature is that the EDCL/ICDL learning modules and certifications address only the most rudimentary computer skills and do not provide a clear indication of computer literacy.

Al Hatmi 2009 cited Poulter and McMenemy (2003) conducted a survey to evaluate the effectiveness of advanced ICT training modules at the university level. The findings of the survey indicated that ICT training is most effective when students have basic computer skills and can focus on learning higher order skills such as troubleshooting. The findings also indicated that the ability of tutors to communicate with students.

Methodology

The study followed Quantitative and Qualitative research techniques including questionnaires, observation and interviews. Quantitative techniques such as percentages, tables and charts were used to analyze data. And qualitative techniques also used for data analysis.

Research Design

Survey design has been the basic research method used in this study. This research has used mixed method research approach. The mixed method approach to research uses a pragmatic research paradigm that combines the positivist paradigms associated with quantitative and empirical research with the phenomenological research paradigm associated with qualitative research (Gliner & Morgan, 2000).

Lists of various ICT skills (Skills range from basic to advance ICT skills) related to Computer File Navigation, Word Processor, Spreadsheets, Databases, Presentations and the World Wide Web were constructed to find out whether the ICDL participants were competent in those skills. A Survey questionnaire with open ended, close ended, Likert scale, lists of various ICT skills relating ICDL software applications and interview schedule have been used to collect data.

Population and Sample

In this study, the population is teachers who followed ICDL training in Sri Lanka under Secondary Education and Modernization Project (SEMP) and Education for Knowledge Society Project (EKSP) funded by ADB for the Ministry of Education. A purposive sampling method has been used to select the teacher sample for this study. 848 secondary school teachers have qualified in ICDL training in the Badulla district between the period of 2008 and 2013 under EKSP project. From all these 848 Secondary school teachers in the Badulla district, a sample of 85 teachers have been selected representing 10% each Sinhala, Tamil and English medium teachers. From the selected sample of 85 teachers 50 of them had undergone Post Graduate Diploma in Education (PGDE) training through open and distance mode at Open University of Sri Lanka (OUSL) and the other 35 teachers currently following PGDE at OUSL.

Data Analysis

1. ICT skills related to Computer File Navigation

When considering the basic skills related to Windows Explorer, saving files in a selected folder, creating and naming new folders, navigating between existing folders and copying, deleting and renaming files almost all the 85 participants in the sample (100%) stated that they were competent in these skills. These indicate all participants had competence in the very basic skills related to Windows Explorer through ICDL training. When considering skills related to Windows Explorer, 56% of the participants stated that they were competent in skills selecting and navigating between Drives and Directories and 52% in using appropriate help files. On the other hand, when considering advanced skills related to Windows Explorer, only 45% of the participants stated that they were competent in installing software, 42% in recognizing different file types, 29% in Zipping and unzipping files and 46% in Doing complex searches for files.

The respondents mentioned that to use a computer systematically this module was very helpful for them and that Module 02 helped them to create files, save files, create and name new folders, copy, delete and rename files, and use appropriate help files for several purposes and manage documents in a systematic manner without any complication.

2. ICT skills related to Word Processor

When considering the very basic skills related to Microsoft Word, Creating a new document, Formatting a document and changing fonts all the 85 participants in the sample (100%) stated that they were competent in these skills. When considering middle order skills related to Microsoft Word, 88% of the ICDL participants stated that they were competent in spell checking, 88% in Inserting text, 92% in Inserting page numbers, 71% in Adding headers or footers, 62% in printing, 87% in Inserting images, 78% in Creating tables, 67% in Changing page set up, 72% in Changing margins and 73% in Using columns and sections. On the other hand, when considering advanced skills related to Microsoft Word, 49% of the ICDL participants stated that they were competent in setting up styles and 46% in using mail merge. The factor medium functions were examined to ensure presence of skills whether as a moderator for the findings, with the 52.94% of the respondents being Sinhala medium participants, 29.41% of the respondents being Tamil medium participants and 17.64% of the respondents being English medium participants.

Almost all the participants mentioned that module 03 helped them to prepare their scheme of work, to prepare lesson notes, to prepare question papers, to paste pictures, to write letters, to write articles and to do several classroom activities with students.

3. ICT skills related to Spreadsheets

When considering the very basic skills related to Microsoft Excel, Creating a new spreadsheet, Entering data into an existing spreadsheet and inserting some calculations, almost all the 85 participants (100%) in the sample stated that they were competent in these skills. When considering skills related to Microsoft Excel, 82% of the participants stated that they were competent in formatting cells, 78% in sorting cell, 85% in Inserting and deleting rows and columns and 85% in creating new charts. With regard to of middle order skills related to Microsoft Excel, 44% of the participants stated that they were competent in modifying existing charts, 42 % in applying complex formulae, and 41% in using absolute and relative cell references and 39% in Referring to multiple worksheets. With respect to advanced skills related to Microsoft Excel, 24% of the participants stated that they were competent in using filtering, 21% in using conditional formatting and 19% in Importing or exporting data.

The majority of participants mentioned that the language used in module was hard and within a short period the instructor tried to complete the module as scheduled for this ICDL module was an in eighteen day course.

4. ICT skills related to Databases

With regard to the basic skills related to Microsoft Access, Creating simple tables all the 85 participants in the sample stated that they were competent. With respect to basic skills, 74% of the participants stated that they were competent in using simple queries to retrieving data, 61% in using wizards to create reports and forms and retrieving and 53% in entering data in an existing database. On the other hand, when considering middle order and advanced skills related to Microsoft Access, 48% of the participants stated that they were competent in Using relational databases, 26% in Using wizards to create forms, 14% in Using more complex form design tools, 11% in Creating and using parameter queries, 31% in Creating summary reports, and 09% in Using complex functions in queries. This indicates that while a majority of the participants were competent in basic skills related to Microsoft Access, only a minority of the participants were competent in middle order and

advanced skills. The participants mentioned that as the duration allocated to learn this module was not adequate they could not understand it and they were further concerned that practical sessions were also not adequate.

5. ICT skills related to Presentations

When considering the basic skills related to Microsoft PowerPoint, all the 85 ICDL participants in the sample (100%) stated that they were competent in creating a new slide show, editing an existing slide show, Inserting images and Changing font and layout. When considering middle order and advanced skills related to Microsoft PowerPoint, 85% of the participants stated that they were competent in navigating back and forth during a presentation, 87% in adding animations and transitions, 78% in Inserting hyperlinks, 65% in using master slide functions, 71% in Including sound, 64% in Printing handouts and 67% in Adding navigation buttons. This indicates that while all the participants were competent in basic skills related to Microsoft PowerPoint and a majority of the participants were competent in advanced skills.

The participants mentioned that this module helped them to do several activities in school and the classroom. They mentioned that this module helped them to prepare a slide show in attractive manner, teach students using Power Point Presentation and do easily assessable activities. The interviewees indicated that they would be using some of the software covered in the ICDL training on classroom applications.

6. ICT skills related to the World Wide Web

With regard to the skills related to the World Wide Web, Doing basic searches all participants (100%) in the sample stated that they were competent. 76% of the participants stated that they were competent in Navigating to known websites, 71% in Creating Favorites or Bookmarks and 71% in Saving images and text. On the other hand, only 36% of the participants stated that they were competent in Using advanced search tools, 38% in Organizing Favorites or Bookmarks, 27% in conducting complex searches, 38% in Downloading and installing software and plug-ins and 40% in using different browsers skills related to the World Wide Web. When considering the skills related to the World Wide Web, Altering browser preferences, only a 14% of the participants stated that they were competent in this skill. They mentioned that this module helped them to access internet and find the webpages which they wanted and create an e-mail account. These findings are in accordance with the findings of Egbert, Paulus, Nakamichi, (2002) and Abuhmaid , (2011).

Discussion

At the interview session the interviewees criticized the strong focus of the training on the requirements to pass the ICDL certification testing may because the training was limited to the specific skills necessary to pass the test. These findings are supported the findings of Al Hatmi (2009). Finding revealed that a high number of ICDL participants were competent in basic skills related to ICDL software applications while only a minority of the participants competent in advanced skills. These findings support the findings of Randall and Zirkle (2005) as they have suggested that additional vendor-specific training might be required after obtaining ECDL/ICDL certification because the certification does not encompass many task-specific skills. However, the findings revealed that those who had prior knowledge in certain area in ICT skills with regard to different software applications were more competent after ICDL training in those skills. This findings support the findings of Poulter and McMenemy whose (2003) findings of the survey indicated that ICT training is most effective when students have basic computer skills and can focus on learning higher order skills such as troubleshooting.

The findings revealed that the medium of teachers were moderate competent in skills related to ICDL software applications in ICDL training. This finding supports previous research of Satharasinghe (2006) who shows that there is a significant.

Conclusion

ICT skills related to different software application after ICDL training of secondary schools teachers in Badulla district can be summarized as follows. The general implication of the literature is that the EDCL/ICDL learning modules and certifications address only the most rudimentary computer skills. The findings of the skills related to Computer File Navigation applications show that all participants are very competent in basic skills and majority of participants were competent in middle order skills. On the only a minority of participants were competent in advanced skills. The findings of the skills related to Microsoft Word applications show that all the participants were competent in basic skills and majority of English medium participants were competent in middle order and advanced skills. On the other hand while majority of Sinhala and Tamil medium participants were competent in middle order skills, only a minority of Sinhala and Tamil medium participants were competent in advanced skills. The findings regarding skills related to Microsoft Excel show that all the participants were very competent in basic skills. On the other hand, a majority of Sinhala, Tamil and English medium participants were incompetent in advance skills. The findings indicates that in basic skill related to Microsoft Access, while a majority of the English medium participants were competent in basic and middle order skills, only a minority of the Sinhala and Tamil medium participants were competent in middle order skills. On the other hand only minority participants were competent in advanced skills. Findings indicate that all participants were competent in basic skills related to Microsoft PowerPoint and a majority of participants were competent in middle order and advanced skills. The findings indicates that while majority of ICDL participants were competent in basic skills related to the World Wide Web a majority of ICDL participants were not competent in middle order and advanced skills. However, the findings show that a majority of the English medium participants were competent in some middle order and advanced skills.

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WEB ARCHITECTURE OF MOBILE SOCIAL MEDIA TOOL FOR ATTITUDE SYNTHESIS

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Abstract

Mobile communication devices, together with internet are widely used. Especially young students use these devices extensively. There are also concerns of society that social media exchange is causing attitude problems, especially in young generation. In a recent survey conducted, it was noted with concerns that use of Internet and social media is causing habits not suited to civil society of the future. The key objective of this research is to develop web architecture of mobile messaging tool used to change the attitude of students. This paper will describe the architecture of mobile tool which is designed to send and receive specially designed messages to recipients. It will report initial experiences of this synthesis process which progressively tries to build civic/Islamic values among students. The core components of this system include a repository of advisory messages, survey statistics and messaging module connected with an external server. Tool design and its application domain are also described to meet social needs of the people.

Introduction

Mobile phone is an example of modern communication technology. It is recognized as the quick mean of communication in all over the world. The use of mobile phone has been increased exponentially during the last quarter century in the world so as in Pakistan. According to Pakistan Telecommunication Authority (PTA) telecom indicators, annual mobile density has been increased up to 75.6% for year 2014 (PTA, 2014). Its use is not only limited to the person-to-person communication, but to the marketing, internet connectivity, email, text and multimedia message, and for entertainment etc. Specially most of such communication is through combined use of mobile, internet and social media. This paper proposes architecture of mobile messaging tool which will have the repository of advisory messages managed by a pool of relevant advisors. System will send automatic advisory SMS to young registered students based on pre-defined interval and frequency.

Objective of the Study

The primary objective of this study is to develop web architecture of mobile messaging tool which is able to conduct SMS based surveys and automated advisory messaging system for changing attitude of young students.

Research Questions

To achieve the study objective, the following research questions are formulated:

“How can we use mobile social media to change the negative attitude of students?”

Significance of the Study

This study is significant as the architecture developed in this study can be used further to implement such system in open and distance learning environment where young students are physically at distance from teachers and get less mentoring on social and behavioral issues.

Literature Review

The use of mobile phone is now being recognized in the field of education. Its use in distance education for learning and assessment activities is globally accepted. Recent research on mobile phone as an assessment tool for Allama Iqbal Open University (AIOU) students shows that this technology is cost-effective, efficient and acceptable by majority young students (Sangi & Mir, 2013).

According to the research conducted regarding mobile phone addiction among youngsters suggests that the mobile phone technology is very helpful for college students but at the same time it's excessive and misuse can be dangerous and teenagers should be sensitized before using this technology to gain positive advantage from it (Jain & Kakkar, 2013).

A survey study conducted on children's exposure to negative internet content results that young children are more exposed to negative contents of internet than the expectation of their parents. According to authors control of web activities by parents can reduce this negative exposure. (Cho & Cheon, 2005)

A telephonic survey from mothers of teenagers result indicates that parenting style has a key role is managing and controlling children from negative usage of ICT (Eastin, Greenber & Hofschire, 2006). A theoretical framework for internet use and cognitive development states that the internet is a social tool that manipulates cognitive processes. (Johnson, 2006)

The use of Information and Communication Technology (ICT) and social media has been increased and along with many advantages there are many social risks a with its excess and negative use.

A recent survey was conducted to study the effects of ICT on family life. Around 144 useable responses were collected from AIOU students of postgraduate level. Majority of the respondents (71%) either strongly agree or agree that ICT/Social Media exposure leads towards addiction of adult websites as illustrated in Figure 1. About 74% of respondent supports the view that ICT/Social Media exposure to negativity of ICT is causing moral and ethical problems. An immense majority (76%) of respondents favour the view that ICT/Social Media enhances individual exposure to cyber bullying, hacking, pornography, gambling and harassment.

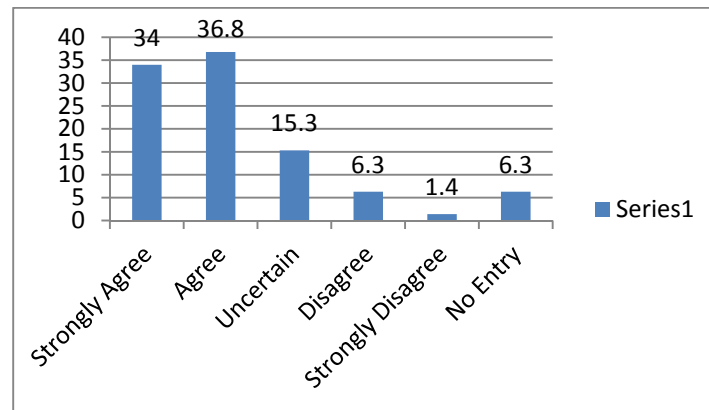


Figure 1: Social media exposure leads towards addiction of adult websites

Excess use of technology without proper monitoring and check and balance can lead the young generation towards negative social attitude causing irreparable loss to civic society fabric. The web-based software tool proposed that will educate the young students for their social habits and attitude. This tool intends to shape and build attitude of young mobile users by sending them a series of pre-designed messages with proper timing and sequencing which can be used to continuously condition the social behavior of people, especially young minds. The tool will send social behavior oriented messages of different category to registered young students to help them in improving their attitude positively. This tool will not only send messages but will also act as a yardstick to measure the attitude change in young students by conducting baseline and post message surveys.

Literature review and survey result suggests that social media is causing negative impact on our society young minds. This negative impact is producing unconstructive social attitude which needs attention. A web-based software tool is proposed to cater this issue of negative social behavior.

Research Design

Open-source programming PHP and MySQL as database are the core building block of this system. A third-party SMS web Application Programming Interface (API) has been used to send and receive Short Messaging Service (SMS). The basic purpose of this tool is to develop positive social behavior amongst the young minds of the society through SMS. This tool will act as a yardstick to measure the social attitude level of the society. It will deliver social oriented messages of different category to registered students to help them in improving their attitude positively. A baseline survey is conducted to check the attitude of students regarding Smoking. Figure 2 represents the system architecture of this proposed tool.

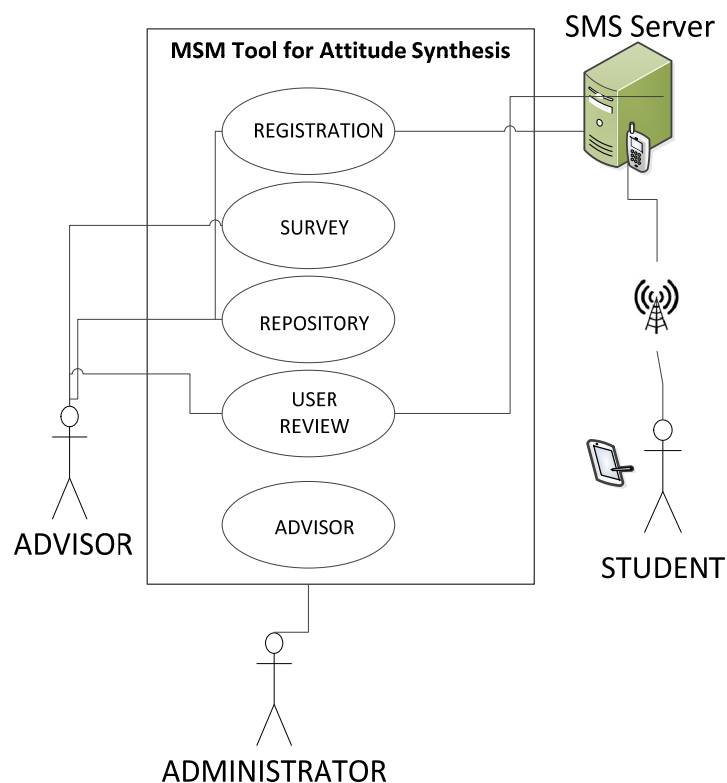
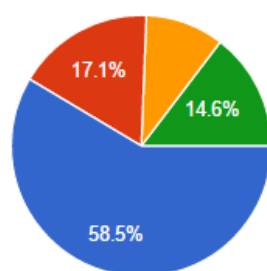


Figure 2: Web Architecture of MSM Tool

As a pilot testing of system initial pre-messaging online survey is conducted in which 39 students of different age groups and educational levels participated. Smoking was selected as a major domain. A questionnaire having twelve questions on smoking was floated online. According to the responses, around 58% participants never smoked while remaining used to smoke occasionally or regularly as shown in below Figure 3.

How often do you smoke?

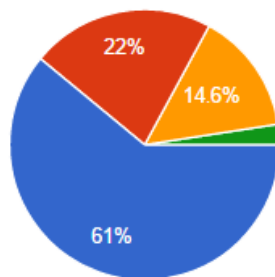


Never	24	58.5%
Occasionally	7	17.1%
Regularly	4	9.8%
I'm chain smoker	6	14.6%

Figure 3: Initial survey response

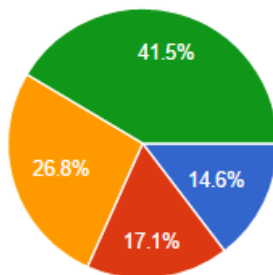
Majority of the survey participants i.e. 63% disagreed that a smoking person looks a dashing personality whereas around 37% agreed with this statement. Around 39% participants think that smoking is a good tool for releasing tension which is quite alarming.

Smoking is a good tool for releasing tension?



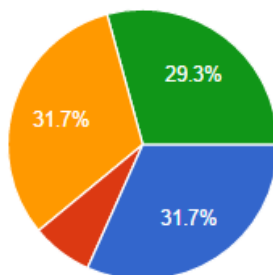
Disagree	25	61%
Somewhat Agree	9	22%
Agree	6	14.6%
Strongly Agree	1	2.4%

Smoking should be banned permanently everywhere (private and public areas)?



Disagree	6	14.6%
Somewhat Agree	7	17.1%
Agree	11	26.8%
Strongly Agree	17	41.5%

Smoking should be banned in public places only?



Disagree	13	31.7%
Somewhat Agree	3	7.3%
Agree	13	31.7%
Strongly Agree	12	29.3%

Figure 4: Initial Survey Response

Discussion

This tool will conduct SMS based surveys to measure the level of existing and acquired attitude after messaging. The system will initially conduct baseline survey to analyze the current situation of attitude followed by series of social oriented messages with appropriate time and sequence. The sequence and timing of the messages will be defined by respective advisor or subject expert.

Once the messaging process is completed, advisor will conduct a post-messaging survey to measure the change in attitude by comparing the results of baseline and post-messaging survey. Advisors will directly interact with the system by managing the messages repository and conducting surveys. However, students will interact indirectly with it using their mobile phone via SMS.

The system also allows students/users to contribute in the repository. Figure 2 shows the overall architecture of this system. User-review module is capable of receiving user's review against existing repository item or new contribution and it is included in the repository after approval of the respective advisor.

Administrator will manage the overall system and mainly the advisors module. Advisors will develop and maintain the repository of their respective domains. They will also conduct surveys in their area before initiating the messaging series.

Conclusion

The use of ICT and social media has many benefits on youth development whereas the negative effects caused by these technologies on young minds can be controlled by using the same medium of communication in right and positive direction. MSM Tool architecture proposed is one of those efforts which can be used by educational and social organizations to synthesize the attitude of young minds. Initial baseline survey results shows that there is room for improvement in attitude of students towards smoking. Automated advisory messages using MSM tool may reduce the negativity of student's behavior regarding any social aspect.

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A STUDY ON E-LEARNING ENVIRONMENT IN MOBILE INTERNET ERA-A CASE FROM THE OPEN UNIVERSITY OF CHINA

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Abstract

Construction of learning environment is of great importance for effective and high-quality learning. With development of new technology, like Cloud computing and Big data in this mobile internet era, e-learning environment need to be improved further. Combining with empirical experience in e-teaching, the present paper introduces the concept of context, aiming to discuss the general framework of constructing e-learning environment in the mobile internet ear. Additionally, key strategies in e-learning environment construction are examined.

Keywords: Internet, learning environment, E-learning

Introduction

Negroponte said in ‘Bing Digital’ that there are might not as many students with learning disorder as we thought, but disordered teaching environment is surely beyond our imagination. Construction of learning environment is very meaningful for effective learning [1]. One of the most important bases of remote learning is e-learning environment, which is directly related to the foundation of remote learning and learning quality. With the development of information technology, numerous learning environments which based on internet have been developed, providing more opportunities of learning and make it convenient to learn. Also, with the development of Cloud computing and big data, it is necessary for e-learning environment to improve with new features. Since there are many factors influencing e-learning environment, it is a complicated, long-term and systematic project to develop and construct high-quality e-learning environment, which could satisfy learners and promote effect learning. This article aims to explore practice and thoughts in constructing e-learning environment. Here training program of Open University of China (OUC) educators is taken as empirical case.

E-Learning Environment and Its Elements

Environment is conceptualized in comparison with some specific core elements, which include outer space, conditions, and status. According to this definition, learning environment is space, conditions, and status which promote learning. ‘Learning environment’ normally appears to be static though it is essentially dynamic [2]. Learning activities are core elements of learning environment. They are coexistence and symbiosis. Situations and conditions of learning continuously change with the development of learning activities. Also, learners do their study by constructing meaningful experience and through attentions on dynamic information offered by learning environment.

Comparing with learning environment in traditional schools, e-learning environment breach limit of time and space, making it more convenient for learners to get richer resources. Despite these uncompetitive advantages, we should keep it in mind that it is not easy to construct high-quality online education environment. Comparing with traditional education mode, e-learning environment involve more essential factors. E-learning environments developed by related organizations and educational enterprises are not uniformly in good quality, which incur many problems like cognition overload, emotional loss and moral disorder [3]. All these problems are under our expectations. The causes mainly involve facial emphasis on development and application of technology, and lack systematic design, optimization and integration.

In this mobile internet era, or even incoming internet of things era, e-learning environment is the integration of information, cognition, and emotion. For specific learning activities, e-learning environment has double attributes of unlimited expansion and relative dependence. On one hand, dominant elements, like touchable and operative learning interface, visualized learning resources are included. On the other hand, hidden factors, such as learning atmosphere and teaching strategy, are also involved in.

“context” is a concept with clear direction, complete integration and dynamic essence. This concept makes it easier, clearer and more objective for us to understand essential elements of e-learning system. E-learning is actually composed of three essential factors: knowledge, technology, and human (teacher and learner)[⁴]. Deep analysis of these three elements is very helpful in understanding all the basic constructing factors of learning environment and their correlations, See table 1.

Table 1: Elements of e-learning Environment

Human	Technology	Knowledge
Teachers, learners, Teaching management personnel, technicians, etc.	Media Internet Other technology	Subject knowledge and skills Teaching methods and skills Technical application skills

Accordingly, e-learning context contains three dimensions of knowledge context, technology context, and social context. So, the complicated correlations among these three subjects compose context of different subjects. Based on this point, the three contexts are not independent of each other and have no absolute limits. Conversely, they are closely correlated with each other and complement each other.

Changes and Trends of Learning Environment in the Mobile Internet Era

Being restricted by network technique and degree of knowledge, e-learning environment was originally constructed by teaching institutes and teachers, which had needs of improving management and teaching. Since this is not done to compliment needs of learners and without systematic design either, practicability of these e-learning environments could not satisfy learners and could not be continuously developed as a result.

With continuing development of network technology in the mobile internet era, newly-rising Cloud computing and Big data make it possible to optimize e-learning environment. For example, with rising up of MOOC, learners get to know internet-based learning better. E-learning environment develops on a general framework with satisfying and excavation of e-learning requirements. Comparing with previous e-learning environment, e-learning environment in the mobile internet era has characteristics of cross-platform connection, rich media technology, intelligent-driven, and personalized essence. Furthermore, mobile internet era is a time with excess resources and massive information, which fragment people’s allocable time. Then, it makes great rising of learning choices and extracting factors as well. As a result, it is not easy to attract learners’ attention and concentration anymore. Demand is also growing for e-learning environment scenes with fragmentation and division of learning resources.

Under the current circumstances and in the future, neither the traditional education nor the e-learning could be parted from the internet. The realization of all instructions relies on the mobile internet technology. Online and offline education differ only in the teaching environment or the teaching method, and undoubtedly constructing the learning environment based upon the internet would definitely assume greater importance.

The Framework and Practice of E-Learning Environment

In general, the present paper aims to explore practice and thoughts in constructing e-learning environment. Here training program of OUC educators is taken as empirical case. Training program for online education practitioner is a project specially designed for improving general ability professional ability of e-education practitioners. Educators could join this program on the internet. See Figure 1 for general framework of e-learning environment construction.

Several characters, including learners, teachers, teaching management personnel, and technicians, are involved in human factor of e-learning environment. Among all these characters, teachers are in a core position. The interaction between teachers and learners influences the non-material factors in e-learning environment. The social context of e-learning environment is composed of all these elements above. For knowledge factor, subject knowledge, teaching method, and media application knowledge form the knowledge context. For technology factors, media technology, network technology which includes Cloud computing and Big data and so on, are involved in technology context.

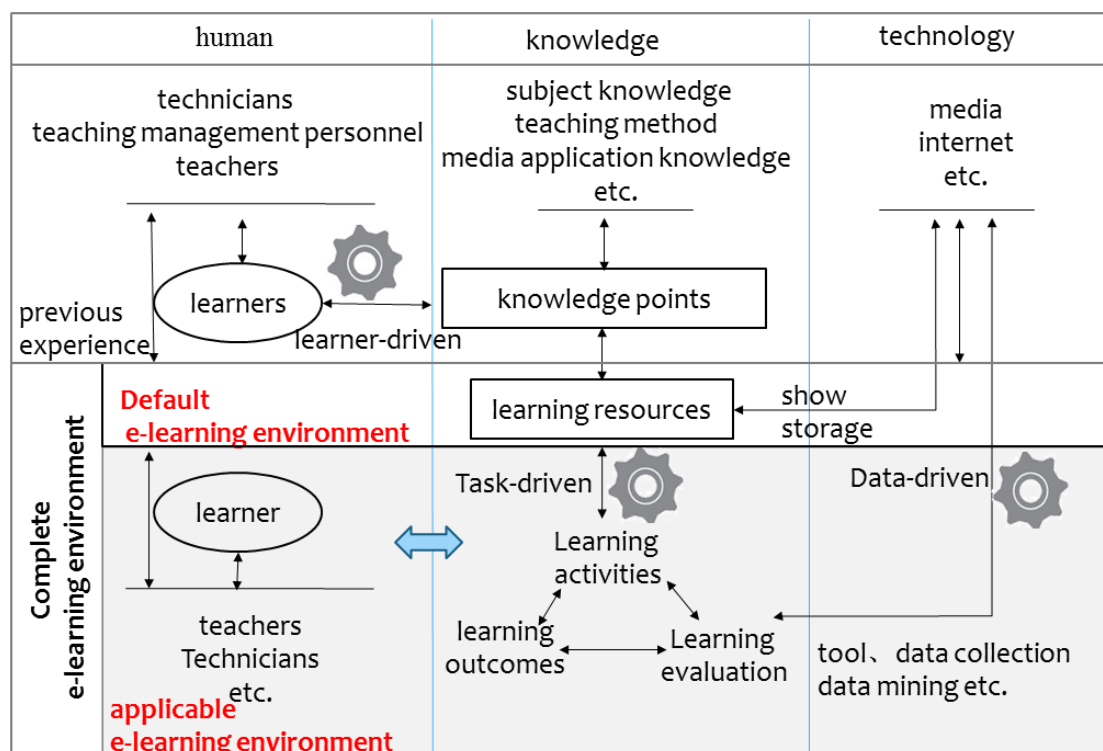


Figure 1: The framework of e-learning environment construction

In the mobile internet era, e-learning environment aims to meet learners' learning demands (needs), support multi-MTs (mobile terminal), including PC, Pad, mobile phone, etc. meanwhile guarantee the information synchronization. And furthermore, adult learners' characteristics should be taken into serious consideration in learning resources constructing and activities designing.

Construction of e-learning environment is divided into two stages. One is construction of default learning environment, and the other is construction of applicable learning environment. The applicable learning environment including default leaning environment is a kind of internet leaning environment based upon learners' learning experiences and participation ever since the activation of learning activities.

Construction of Default Learning Environment

Online learning platform is one of the main carriers of e-learning environment. Default learning environment is the first static thing learners could sense when they get into learning platform. To construct good default learning environment, analyses of learner demands, learning ability, knowledge point, teaching methods, media application and presentation technique should be taken into design and development. Delicate designs of platform pages, learning paths, default learning resources and background database system are all in great importance for constructing fine default learning environment. The default learning environment is the basis for the internet learning environment, the primary impression in learners' individual learning process, and also the guarantee for the satisfactory learning experience.

To be specific, user-driven strategy, namely learner-driven strategy, should be adapted in construction of default learning environment. Demand and characteristics of learners are in great importance in the constructing process.

The Simplicity of the Interface

In the mobile internet era, the lack of attention sustention urges that simplicity be the basis of commercial logic. The e-learning based on the internet technology should also obey the rules mentioned above as well.

In the early stage, learning website pursues the overwhelming functions, so consequently learners would sometimes drift off course when facing gigantic amount of information. And the second shortcoming is such gigantic amount of information could not be deployed on the screen of mobile phone. So in the designing of the learning platform, dialectically we follow the principle of simplicity and optimize the learning materials to protrude the essentials. In other words, less is more, designing of platform pages emphasize on simplicity, which present concise teaching resources to learners, detaining the complicated organization and intricate constructing logic behind. Through the presentation of learning resources, we try our best to pursue the visual simplicity and user-friendly effect. Thus, learners do not need to commit to memory the location of functional devices and sequence of operations. Simplification of learning paths and reducing overload of technology is of great help in presenting core learning contents and constructing excellent learning resources.

The Fragmentation of Learning Resources

We designed the fragmentation of learning resources to meet learner's fragment learning demand in the mobile internet era. According to the internal logic of the course, all learning contents are split into knowledge spots possessing mutual linkage, and then mapping the knowledge structure could easily be realized. The instructing of specific knowledge spot is conducted and such video, one after another, is concisely set in series.

Every video is programed according to adult learners' cognitive characteristics, aiming to realize effective orientation, sustaining learners' attention, and scaffolding learners to master the knowledge. In general, each micro-video lasts for around 3-8 minutes. The fragmented learning materials not only decrease learners' pressure and stress in learning, but also trigger the ubiquitous learning.

The size of learning material is also taken into consideration. The sufficiency and diversity of learning materials should be guaranteed and meanwhile the doctrine "Less is more" should not be neglected. The overloaded materials would definitely depress the learners' motivation and arouse fears in learning. So in the construction of learning materials, the appropriate scheming and renewing would moderate learners' learning behaviours and be helpful for the learners' retention ratio. Farther more, it is important to present learning contents in a way of visualizing explicit knowledge and explicating invisible knowledge.

Besides, in order to meet learners' demands for fragmented learning, OUC (the Open University of China) has already developed learning platforms matching MT learning devices such as PC, Pad, mobile phone, etc. The seamless link among different kinds of MTs would foster synchronous learning and diminish leaning burdens.

Construction of Applicable Learning Environment

Application learning environment is constructed on the basis of interaction between learning platform and learning contents, also between learners and teachers during learning process. Learners could feel applicability of learning environment when they get into learning platforms. Applicable learning environment is mainly implemented in learning activities, learning atmosphere, learning groups, and learning support services. Application learning environment is the actual context of learning behaviour, possessing features such as dynamic, formative, constructive and interactive. In the application learning environment, strategies, like task-driven and data-driven, are employed. In the above process, evaluation of learning effectiveness is highlighted.

Task-driven Strategy

The so-called task-driven strategy is the active application of learning materials under the motivation of an actual question or a specific learning activity. In this process autonomous learning and peers learning are combined. On fulfilling the assignment (or the task), learners would also experience and master an effective learning format and forge certain a kind of learning organization.

Task-driven strategy roots in the constructivism of education theory, pursuing the solution of concrete problem, fulfilment of an actual assignment. In the multi-dimensional educational theory, under a specific teaching circumstance, learners bearing the task probe the solution or the settlement of a problem; this process would effectively arouse learners' motivation and scaffold meaningful cognitive construction.

It means connecting fragments of learning resources though learning tasks, helping learners to complete construction of knowledge. Task-driven strategy break the ice situation of traditional e-teaching, attract learners into e-learning interaction, help learners feel presence, sense of participation, sense of belonging, and sense of accomplishment. Learners become both participants and creators in creative learning resources.

Data-driven Strategy

Data support is of great importance in learning evaluation, learning analysis and learning support service during teaching process. Big data generated in e-learning environment is "soft gold". Using Big data technique in collecting, analysing and evacuating learner's e-learning behaviours has numerous advantages. For example, it visualizes learner's learning behaviours, help teachers know exactly learner's learning process and possible obstacles; it upraises precision and efficiency of learning support service, improves user's experiences, and promotes quality of teaching support service. All these benefits yield twice the result with half the effort in helping learners.

The data that can be gathered from the learning platform including of the training program, what video materials that learners use every day, how many exercises have been undertaken, how much time are employed in learning on the platform, what kinds of improvement have been accomplished, what knowledge(s) has been mastered. The data analysis chart is updated in real time, which assure teachers follow learners' learning pace and condition.

At the meantime, the data would reflect learner's individual learning pace, for example, what has been learnt or not yet, which part has been learnt repeatedly, what has been mastered, which part is undertaking, etc. Besides, the time-consuming in finishing the exercises and the rights and wrongs, based on such data, teachers would implement necessary instruction and interference.

Highlighting the Evaluation

Evaluation is an indispensable stage in education. As a feedback and adjustment mechanism, the evaluation plays an important role in learning process for every learner. And evaluation possesses multiple functions, among which the four are essential, guiding, diagnosing, feedback, encouraging.

Learning evaluation bears orientating significance and guiding function for modern learning activities. The criteria, contents and methods, to a considerable extent, confine both teachers and learners' efforts in achievement. A scientific and reasonable learning evaluation would help learners acknowledge the learning pace, level and even the existing problems. Thus, after learners comprehend their individual learning conditions, they would activate their learning motivation and hopefully moderate their learning behaviors to overcome the learning obstacles.

On the basis of e-learning, we intend to employ the information technology and apply the reasonable evaluation strategy to provide the learners with the most refined learning evaluation. And then a self-correcting or self-moderating system would be established based on the timely evaluation during the learning process to guide the learners to realize the learning targets. The combination of diagnostic evaluation, process evaluation and summative evaluation would perform their effects appropriately in learners' routine study activities and provide learners with multiple choices for evaluation. So in view of learners' advantages and disadvantages, encouragement and instructions for learners could be conducted.

In addition, Big data is important reference in student user classification management, new demand detection, teaching plan adjustment, and training program design. In doing this, Big data is one of the important foundations in development and creation in e-learning environment.

Practice shows that e-learning environment based on this framework and the training programs of OUC e-educators have achieved initial results. It is our future objective to further optimize e-learning environment on the basis of this project.

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MARKETING STRATEGY SCIENCE PROGRAM IN BUSINESS ADMINISTRATION OPEN UNIVERSITY OF INDONESIA

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Abstract

MOOC has been developed into the new mode of teaching and online course. Flipped teaching mode has To strengthen Universitas Terbuka (UT) positioning in the minds of stakeholders, strategic brand positioning to be something important for UT. Therefore, UT offers alternative quality higher education and offer advantages/uniqueness of the Online Learning system that offers the advantages of the implementation of self-directed learning process. Through this strategy is expected to be more persevering UT competitive advantage as stated Aaker. (1998). To survive in the 21st century firms must not only provide goods and services to the customer efficiently but should possess a sustainable competitive advantage. This article discuss about the research that had been conducted by the writer about the strategic marketing in UT as online learning in distance education, especially as business administration program. And we will discuss how to strengthen the competitiveness of UT mainly study business administration program in public so as to enhance the attractiveness for students to follow the course of study business administration program through Online Learning.

Key Words: Sustainable competitive advantage, strategic marketing

Introduction

Open University sebagai institutions that implement Distance Learning (ODL) can play an important role in supporting the achievement of the MDGs. The role that can be given by the UT is to provide an opportunity for prospective students to obtain a better education through educational programs to prospective students of Bachelor level so as to improve the quality of their knowledge.

At this time there is increased demand for high-level university education in Indonesia, triggered partly by globalization and velocity era has prompted the emergence of offers higher education programs by various institutions. This situation led to high levels of competition between the various institutions. This situation led to high levels of competition among institutions that require each institution to compete in a competitive (competitive rivalry). But the public demands on the quality of undergraduate education level exceeded. Responds to the high level of the request, at this time have so many institutions of higher learning that offers services ranging from program to program advanced diploma equivalent of a graduate program by offering a variety of advantages to meet the target consumer.

The existence of the fierce competition between universities poses a challenge for UT to survive. The problems still to be faced by the UT at the moment is how to build a reputation and image in the public eye. UT The challenge ahead is how to increase the popularity UT compared to other higher education institutions, the challenges that must be a concern for the future is how to build a positive image in the public eye.

To build a positive image of the need to increase UT positioning in the minds of stakeholders. And to help strengthen the positioning of the image of the need for strategic brand positioning becomes important for UT. UT strategy in the eyes of stakeholders, among others, offer alternative quality higher education and offer excellence / uniqueness of the system of Open Distance Learning which offers the advantages of the implementation of self-learning process. Through this strategy is expected to be more persevering UT competitive advantage as stated Aaker. (1998). To survive in the 21st

century firms must not only provide goods and services to the customer efficiently but should possess a sustainable competitive advantage.

Research Purposes

The purpose of this study was to determine how much interest the public and prospective students to study at Open distance learning of Indonesia (UT), particularly the Business Administration Program.

Discussion

Study Program Business Administration Sciences experienced in higher education open and distance (PTTJJ). An education system that uses information and communication technologies in the learning process is in accordance with the characteristics of modern humans are no longer limited by time and space.

The Open University in the organization of educational process applying the system of 'open and distance ', which means providing learning opportunities to all layers and groups of society without being restricted by the previous educational background, years of diploma, age, years of study, the time of registration, frequency of exams.

Number of Students Study Program Business Administration Sciences from year to year increase fluctuated from 5 to 15% while prosetase lulsuan from year to year the range of 12 to 15% percent of the total students admitted per year. Study program for student GPA Business Administration Science is still around the average of 2.21 to 2.25 per year.

Table 4:24

Ability Attract New Students at the University of Business Administration Program

Tot year. MHS candidates registering Tot. MHS candidate received Tot. The new MHS Tot
Percentage of graduates graduate with a GPA

Student Profile Study Program Business Administration Sciences

Data of all students and graduates in the last five years with the following format:

Login year	Number of Students			Number of Graduates			GPA			The percentage of GPA		
	Transfer	Non-Transfer	Total	Transfer	Non-Transfer	Total	Min	Average	Max	< 2,75	2,75-3,50	> 3,50
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2010	14	146	160	9	39	48	2.00	2.15	2.80	97.92%	2.08%	0.00%
2011	13	180	193	11	28	39	2.00	2.25	2.91	92.31%	7.69%	0.00%
2012	9	241	250	7	23	30	2.00	2.20	2.75	96.67%	3.33%	0.00%
2013	12	248	260	2	29	31	2.01	2.23	3.01	90.32%	9.68%	0.00%
2014	7	286	293	10	19	29	2.01	2.21	2.85	96.55%	3.45%	0.00%
Jmlah												

Note:

- TS: the last full academic year while charging borang
- Min: Minimum GPA; average: GPA average; Max: Maximum GPA
- Student transfers are students who go to courses S1 (Under Graduate) by transferring course credit that has been gained from PS (Study Program) S1(Under Graduate) same from other universities, PS S1 another of the same PT, or graduate Diploma of PT's own PS and PT others.
- Students are non-transfer students who enter the program S1 since the first half (straight out of high school graduates).

Number of Students Study Program Business Administration Sciences from year to year increase fluctuated from 5 to 15% while prosebtase lulsuan from year to year the range of 12 to 15% percent of the total students admitted per year. Studi program for student GPA Business Administration Science is still around the average of 2.21 to 2.25 per year.

Ability Attract New Students at the University of Business Administration Program

Total year	Candidate registering students	Total receivd students	Total new students	Total graduatest	Total percentage graduate students with GPA		
					2,0 – 2,74	2,75 – 3,60	3,61 – 4,0
(1)	(2)	(3)	(4)	(5)	(9)	(10)	(11)
TS-3	409	409	409	105	98.18%	1.82%	0%
TS-2	340	340	340	93	96.15%	3.85%	0%
TS-1	365	365	365	164	96.81%	3.19%	0%
TS	117	117	117	72	93.06%	6.94%	0%

Source: BAAPM-UT, August 2014

Note: - TS = current year (2013.1 exam period): TS-1 = 1 year before the TS, and so on.

- This table summarizes the data of all students that include programs from the first year (excluding transfer students)

From table above shows enthusiasts to become students of the Open University in Business Administration Studies Program from 2013 to 2015 has not reached 500 students. Target admission did not reach the target even less than many of the targets in the academic year 2014/2015.

Marketing channels, melaiui scope, expertise and performance as well as images, through symbols, media, atmosphere and differentiation events contribute to developing competitive advantage, so organizations need to develop an effective differentiation strategy. Aaker (1995) states that the success of differentiation must contain three characteristics, namely: generate product value, provide perceive value and be ifficult to copy. So the differentiation strategy successful if it can provide value (value) to the consumer.

The difference is required between the expected value and perceived. Value becomes important point of differentiate views and perspectives of consumers that can strengthen the branding to be meaningful, trustworthy and always remembered by consumers. Then differentiation should connote difficult to replicate so they can be sustainable. For that organsisasi must perform optimal investment in the field of research and development. Furthermore Kotler stated that in developing differentiation needs to be careful because not all meaningful differences. For the differentiation effectively developed if it meets the following criteria: importance, uniqueness mempuyai cash, superior difficult to imitate, can be communicated, profitable and teryangkau price. Diferensias strong positioning and will strengthen the brand (brand) organizations. Brand is wealth. PS Institution Science ADBI very valuable important thing should be understood that the brand has a profound meaning that not only create something diba logo, slogan, catchy saying, inission statement or publicity campaign logo, slogan, CATC. but the brand is trust and credibility of the institution / Study Program Business Administration Sciences. More and the brand is the promise of the institution / Study Program Business Administration Sciences to consistently provide features, benefits and services to stakeholders. And the promise that makes them familiar with the brand institutions more than other brands. In fact, this is now the unique characteristics January modem marketing rests on the creation of brands discriminatory (different) so as to strengthen the brand image Study Program Business Administration Sciences / institution. To communicate the brand image to stakeholders can be done through marketing activities such as promotion (advertising, publicity), the price, the distribution of a

product / service being offered. Stakeholders obtain information about the brand of the institution based on: source of personal, commercial, public and past experience.

From the analysis above, the steps to be taken by Universitas Open are:

1. Attempting to minimize the gap in order to improve the total quality perceived by the students. These five dimensions of quality need to get the attention of the manager of the Commercial Administration Program. It also relates to the source of the introduction of students to study Business Administration Program is largely by word of mouth. Because it requires the manager of the University should really be able to further improve the quality of its services to students, so that the image of the University can be increased. Which in itself will increase the interest to choose Business Administration Program Open University as a demanding institution.
2. With regard to quality of service, then the manager of Business Administration Program should really pay attention to that employee and lecturer in acting as consultants ready to carry out their duties as students need them and respond desirable for the students was the duty of the University. Employees who deal directly with students and professors basically providing services in contact with students, then they should be able to analyze their own needs and desires of students at the point and time of the services produced and consumed, even they should be able to control their services while producing services. Employees who deal directly with students and professors should also be able to become marketers services at the same time as the services are produced. Study program management Administration of Commerce in this regard the Open University must also consider the structure of interconnected that organization, technology used, which expressly formulated the concept of services, will provide guidance, support and encouragement needed to enable and motivate the contact person, to provide services best.
3. Trying to increase promotion through print and electronic media even if it might hold a presentation to high school. Only 20% of respondents who answered knew Program Business Administration through leaflets and brochures (see label 4.23).
4. The new admissions system is more open through the entrance exam.
5. Large donations were withdrawn by the faculty to the new students based on the results of the entrance examination. By dividing into several levels (grade), the higher the entrance exams, the less money donations and conversely the lower results of the entrance exam, the higher the amount of donations and uniformly defined for all faculties and departments, so it can be scaled down for games that are less healthy.
6. Trying to give the price (cost) inexpensive education for students by not reducing the quality.
7. Development funds and donations should be paid in installments over eight semesters, so it can help students in terms of financing.
8. Improving the quality of tenured faculty to follow further education or training teaching. Lecturers should not be kept for a minimum education program S1 S-2.
9. The ratio of faculty: student for consideration. Especially for lecturers fixed the ratio is very large. In the short term can not lift lecturer remains that have competence in their field, and if funds permit in order to remain qualified lecturers appointed.

10. After increasing the quality of service and quality of the faculty, the UT can perform not only external marketing which includes setting up, set the price, distribute and promote all of the services that can be utilized to customers; but also internal marketing that UT should always be able to train and motivate employees and lecturers in order to serve customers with the best and the interactive marketing expertise and faculty employees in serving customers both in terms of technical quality and functional quality.

In learning through the remote use of the Internet to achieve marketing (internet marketing) in attracting prospective students through the promotion of the Internet sites and the media cut costs because it is relatively cheaper and can be more focused than conventional media, making communication with the target is more interactive, and easy to get market demand information. Also that marketing activities can take place at any time. In practice internet marketing including the use of the website Study Program Business Administration Science combined with other online promotion techniques (Chaffey & Chadwick, 2006, p.9).

According to Kotler and Fox in Strategic Marketing for Educational Institutions (1985, p5), educational institutions realize that they have a lot of marketing problems, ranging from decreasing the number of students who enroll, small grants for education and sources of other income, while operating costs continue to rise. It is reminded that the educational institutions are also thinking about dependence on markets where they are located. Many institutions face the changes in the expectations and needs of students, while competition is increasing to acquire new students and new funding sources.

Students entering into educational institutions for realizing the benefits they can gain. The targets of modern educational institutions is to achieve its objectives by offering the exchange of value between the market and the public different. From the description above can be obtained as follows according to the definition of marketing Kotler and Fox (1985, p6), marketing is defined as a managerial process that includes analysis, planning, implementation and control. This definition emphasizes the role of marketing in helping educators face marketing problems.

This marketing strategy can be divided into Internet marketing and traditional marketing activities (Rafi & Fisher, 2003). Achievement of internet marketing interact with the brand owned. Besides being able to give a negative or positive effect, but the brand itself is also bias the results of internet marketing activities itself.

Grönroos (Tjiptono, 2001) confirms that service marketing requires not only external marketing but also internal marketing and interactive marketing. External marketing describes the activities normally performed by Study Program Business Administration Sciences in preparing services, set a price, distribute and promote the valuable services provided to consumers. Internal marketing describe the duties Study Program Business Administration Sciences in order to train and motivate employees to be able to serve consumers well. Besides internal marketing and interactive marketing involves a college student and human resources (Kotler and Fox, 1985, p.473).

In the end the whole interaction is expected to help college produce a good performance.

Study Program Business Administration Sciences said to have a sustainable advantage only when consumers feel the difference between the product Study Program Business Administration Science and competitors, these differences arise because of the capabilities gap, and that gap can be maintained. The strategy can also be defined in several levels, namely;

1. Corporate strategy, which deals with the allocation of resources among the various businesses or divisions in the Study Program Business Administration Sciences.
2. Business Strategy, contained on a business level or a particular division, dealing specifically with the position of the competition (competitive advantage).

3. Functional strategy, which is limited to *tindakantindakan* certain functions within a business (eg marketing functions, personnel, financial and other).

To face the strength of competition, Porter (1980, p. 35) suggests the need for a strategy known as generic strategies is a fundamental way for the company to achieve profitability above the industry average to have a sustainable competitive advantage.

Generic strategy consists of three kinds:

1. Strategy overall cost advantage, achieve overall cost advantage in the industry through a set of functional policies aimed at the main targets.
2. Differentiation Strategy, is the differentiation of the products or services offered
Study Program Business Administration Sciences, was to create something that is felt by the whole industry as a unique thing. The approach to differentiation can be many different forms; design or brand image (brand Image), technology, special characteristics, customer service, network dealer, or other dimensions.
3. Focus Strategy, is to concentrate (focus) on a group of buyers, segment product lines, or a particular geographic market.

Generic Strategies - Michael E.Porter

Michael Porter describes a scheme that covers three general types of strategies that are commonly used by business unit businesses. These three generic strategies are determined through a two dimension, namely: strategic scope and strategic strength.

1. Strategic scope is the dimension of the demand side (demand side), which is determined by the size and composition of the market which would be used as a target.
2. Strategic strength is the dimension of the supply-side (supply side), which can be seen from: the strength or core competencies Study Program Business Administration Sciences. Identified by two of the most important competence, namely: product differentiation and product cost (efficiency).

Porter ranks every 3 dimensions (level of differentiation, relative product cost, and scope of target market) with a rating: low, medium, or high, and aligns in a matrix of 3 Dimens (See Figure). In his classic book, *Competitive Strategy* (1980), Porter simplify the scheme into 3 best strategy, namely: cost leadership, differentiation, and market segmentation (or focus). Market segmentation / focus is more narrow scope strategy, cost leadership and differentiation were relatively wider its scope. Empirical evidence suggests that PS Sciences ADBI which has a large market share will enjoy a higher profit, but many Study Program Business Administration Sciences has a small market share with low profits. Porter explained that Study Program Business Administration Sciences with a large market share will be successful if they use the strategy of cost leadership and Study Program Business Administration Sciences with a low market share would be successful if they use the strategy of focusing on niche markets (market niche). The combination of multiple strategies will succeed only with one thing, which is a combination of strategies focus on product differentiation strategy will be effective if it is able to integrate product strategy (the supply side) with the characteristics of the target market (demand side). But a combination of cost leadership strategy with the strategy of product differentiation is difficult if not impossible to run because there is a conflict between the extra cost minimization and cost differentiation. Because of that, some opinions distinguish between cost leadership strategy, low cost strategy, best-cost strategy. Low cost strategy is not able to guarantee a lasting competitive advantage (sustainable competitive advantage). In many cases, there is often a price war. Then the best cost strategy is more widely used, because it provides the best value at a low price. Best value for are relatively low price.

Cost Leadership Strategy

This strategy emphasizes the efficiency. With high production volumes of standard products, Study Program Business Administration Sciences hopes to take advantage of economies of scale and experience curve effects. Standard without any additional products that can be produced at relatively low cost and can be made available to the broadest possible customer. This strategy can be achieved by the provision needs to search continuously price reduction of all aspects of the business. This corresponds to a distribution strategy that is able to provide the widest possible distribution of the product. Promotion strategy often used include efforts to hide the product features low cost. The success of this strategy requires a consideration of the advantages of market share that is able to access raw materials, components, labor, and other essential inputs. Without these advantages, this strategy will be easily imitated by competitors

Differentiation Strategy

Differentiation include the creation of a unique product. The study program has a unique advantage that focus on areas of policy analysis and implementation in the field of entrepreneurship.

Market Segmentation Strategies Strategy -Focus

In this strategy Study Program Business Administration Sciences concentrate on the selection of specific target markets or also called focus strategy or niche strategy. By focusing marketing efforts on one or two narrow market segments and adjust the marketing mix in this specific market then expected Study Program Business Administration Sciences Science can meet the needs of the target market better. Study Program Business Administration Sciences for profit by achieving competitive advantage through effectiveness rather than efficiency. This strategy is appropriate for Study Program Business Administration Sciences relatively small and generally employ guerrilla marketing strategy After Study Program Business Administration Sciences have to compete then the Program Study Excellence in Study Program Business Administration Sciences needs to maintain in order to continue to be a superior way is through the three elements that can support. Three elements are (Abdelhadi, 2012):

1. Integrity is the quality, the nature of the workers therein or circumstances which indicate that full unity so that it has the potential and ability emissive authority; honesty in work.
2. Performance is shown every worker results, performance Study program is displayed to show that the Business Administration Sciences able to pass each activities that can increase profits Study Program Business Administration Sciences. Consistently give a maximum contribution to the Study Program Business Administration Sciences order produce the best impressions and the last element is
3. Non-Competitive ie every faculty and administrative staff who are therein do not compete with one another but carry out activities work with besama together and not berkompetisi. Sehingga harmony and harmonious state can be created.

By maintaining the benefits of Study Program Business Administration Sciences, then Study Program Business Administration Sciences will be able to continue to maintain the continued excellence that exist and continue to explore more of what you think he can be appointed to excellence PS Sciences sustainably Business Administration.

Conclusions

From the data analysis and description in the previous chapter, the authors conclude as follows;

- From the research on all dimensions result turns out there is a considerable gap. Scores whole dimension of quality experienced exceed gives meaning Studies Program Open University Business Administration ugly, because it is not the same as expected. Proven in Introduction to Business Administration Program Open University by students through advertising obtained results (newspapers (12.5%), TV (0%), radio (6.25%), friends (50%), family (6.25%), brochure 25% this suggests about 50% of students to the introduction of Business Administration study program obtained through market communication.
- The role of word-of-mouth (56.25%) is greater than the role of market communication (43.75%). Promotion via word-of-mouth is very beneficial for the university, because it does not cost anything. Because it's a good positive image of the Open University is indispensable, is subjective and relative, however, in general it can be said that all the students expect get good services from the Open University.
- In the tangibility dimensions exceed the expectation level and experienced level, this means poor quality. Price (costs) incurred by the students is quite expensive look of pernyataan respondents. Similarly, for new students charge. At dimensional Reability Business Administration Program have not been able to satisfy the students, because the expectations are higher score than experienced. For the dimensions of responsiveness, assurance and empathy, the quality level of quality that exceeds the expectations of experienced, this means that the quality of service functional quality of Business Administration study program is not good and yet meet the expectations of students .

Suggestions

Based on the above conclusions, the authors suggest;

- Should Study Program Business Administration, or the Open University minimize the gap felt by the students, because the source of the introduction of students to study Business Administration program largely by word of mouth. Because it requires managers of Business Administration University Studies Program should really be able to further improve the quality of its services to students, so that the image of the University can be increased. Which in itself will increase the interest choose Business Administration Program Open University as a place of study.
- For employees and professors, managers of Business Administration Program should really pay attention to the gap, even to be able to control their services while producing services.
- Trying to increase promotion through print and electronic media even if it might hold a presentation to high school. This is evidenced by 20% of respondents said knowing Program Business Administration through leaflets and brochures.

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PERCEIVED EFFECTIVENESS OF BIOLOGICAL SCIENCE EDUCATION IN E-LEARNING: A STUDY OF VIRTUAL UNIVERSITY OF PAKISTAN

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Abstract

Virtual University of Pakistan is Pakistan's first University based completely on modern Information and Communication Technologies (ICT); traditionally it offered programs in Social Sciences, Management Sciences, Education and Computer & IT. VUP for the first time has launched its programs in the field of Biological Sciences in e-learning mode by using its state of the art Learning Management System. This is first time that programs in biological sciences are being taught by using ICT in Pakistan. Traditionally these programs were perceived to be the conventional class room programs. This descriptive cross-sectional study is aimed at measuring the perceptions of currently enrolled students of VUP in Biological Sciences regarding the effectiveness of these programs. An online questionnaire was sent to all the enrolled students, 61 students participated in the survey. Mean scores have been used to measure students' perceptions. On the basis of data, it is concluded that students are overall satisfied by the education received in e-learning mode.

Keywords: *ICT, biological sciences, students' perceptions*

Introduction

Education has taken many forms and shapes, from traditional student-teacher individual interaction to class room and then distance learning. Journey of distance learning evolved from correspondence courses (which is still in use) to use of radio & TV and then came internet revolution that introduced e-Learning; M-Learning is the latest form. Essence of distance learning is the separation of teacher and student either by time or space. Benefits of eLearning may include access, low cost and flexibility which enable those who otherwise cannot attend class room teaching.

Being a geographically dispersed and populous country, Pakistan faces the issue of lack of capacity and qualified faculty in traditional higher education institutions. Virtual University of Pakistan (VUP) was established in 2002 with the intent to provide higher education access to all Pakistanis (within or outside Pakistan) quality education by using ICT as force multiplier. Initially VUP offered courses in Computer Sciences & IT, Management Sciences and Social Sciences; recently VUP has introduced programs in Biological Sciences as well. Biological Sciences used to be taught in traditional class rooms in universities/institutions, this is first time that these courses are being taught via eLearning. This research study is intrigued to know the feedback of the students who conventionally studied such programs in class room environment and are now getting higher education via eLearning, does it make any difference? How do they perceive the quality of same courses in eLearning environment?

Objective of the Study

The objective of this research study is to measure the perceived effectiveness of biological science education in e-Learning.

Significance

This research study will help to measure the perceived effectiveness of newly started biological science study programs in Virtual University of Pakistan (VUP). The pure sciences study programs are offered first time in distance education mode in Virtual University of Pakistan which is a unique practice of its type as pure sciences are usually taught in conventional mode of education. The results of this research study will help Virtual University of Pakistan to analyze the newly started programs through the perception of students enrolled in these study programs. It will help VUP to evaluate the perceived effectiveness of biological sciences study programs and can bring improvement in these study programs on the basis of findings and results of collected data from the enrolled students.

Literature Review

Distance education is the arrangement of learning in which student and teacher are present at different places and they interact with each other through communication technology(Moore & Kearsley, 2011). This type of arrangement in education system is introduced due to the technological development(Garrison, 1985). The development and advancement in technology has converted the world into global village(Beldarrain, 2006) and it has opened new avenues of learning in online mode(Keegan, 1996). The learning is not only limited to conventional class rooms now but it has spread across the borders with the help of communication technology(Bartley & Golek, 2004). The conventional class room learning has different environment but online learning in distance education mode has its own characteristics and significance (Moore & Kearsley, 2011). Information Communication Technology (ICT) is very important feature of this mode of education(Beldarrain, 2006). Garrison (1985) has explained that the understanding and familiarity of the components of ICT are very important in effective learning in distance education because whole system is based on ICT. Every study program has its own implications and importance in the world of knowledge(Keegan, 1996). The educational institutions offer different study programs in conventional mode but with the introduction of the concept of distance education in online mode, these study programs are also offered in online learning environment which have benefited numerous learners around the globe(Swan, 2003). The conventional mode of education has typical class room environment and there is direct student-teacher interaction in face to face mode whereas in distance learning environment, the student and teacher are present at distance and there is no face to face interaction between them(Rosenlund & Damask-Bembenek, 1999). There are different tools used for delivery of information or knowledge in online environment like recorded lectures, video conferencing and other internet means of communication(Roberts, Irani, Telg, & Lundy, 2005). Similarly, there are some other components of online education which make it different from conventional mode and these components are vital for the success or failure of this type of education programs(Roberts et al., 2005). According to Keegan (1996), these features or components are considered significant for making the study programs effectively offered in online distance education mode. The evaluation of these features or components of study programs is essential for measuring the effectiveness of these study programs(Kearsley, 1995). The evaluation can be done at different levels. This evaluation can be conducted either at courses level or at program level but the students are important part of the evaluation process because these are the main stakeholders of the study programs(Roberts et al., 2005). In higher educational institutions, the evaluation of courses or study programs is conducted through student's reaction or experience towards the course or program in terms of content, material, way of teaching and instructional techniques(Bartley & Golek, 2004). In distance education, some other factors are also considered while evaluating the effectiveness of study program(Roberts et al., 2005).

Biner (1993) has identified many factors for evaluation of study programs offered in distance education mode and his tool frequently used tool in this regard but Roberts, Irani, Telg and Lundy (2005) also developed a tool for measuring effectiveness of online study programs which is used in this research paper. Roberts et al. (2005) developed instrument for evaluation of distance education programs through systematic process and have identified different factors which can be used for measuring the effectiveness of the education programs offered in online distance education on the basis of different studies conducted in this regard and also on the basis of their own observation (Berglund, Daniels, & Pears, 2006). The factors which they have identified in this instrument are interaction of learner with instructor or with another learner, instructor's capabilities and expertise, course material, course content, method of delivery and technical support (Roberts et al., 2005). In online education, the communication technology has fundamental role (Moore & Kearsley, 2011) due to which the support services are very important aspect in distance education and it is also one of the important factors for evaluation of effectiveness of distance education program (Roberts et al., 2005). The support services include the library services, registration methods and availability of online sources of learning (Keegan, 1996). Similarly technical support has also an imperative role in the effectiveness of study programs offered in online distance education (Beldarrain, 2006). The technical staff should be expert enough to address the technical problems. The delivery method or instructional mode of education in distance education is also an area of main concern and it creates difference between conventional and distance education mode (Hackman & Morris, 1974). The pedagogy adopted in distance education makes the course or study program effective and successful (Moore & Kearsley, 2011). The role of instructor is very important in the pedagogy adopted in distance education environment for effective learning (Keegan, 1996). The instructor requires expertise and skills through which he or she can understand the information communication technology and its related tools and techniques (Beldarrain, 2006) because these tools and techniques are used for delivering lectures and for transfer of knowledge. ICT is key approach through which instructor delivers knowledge to students (Swan, 2003) and the expertise of instructor are essential in this regard to make the program effective (Garrison, 1985). The organization of course is also very vital as it should be very clear (Rosenlund & Damask-Bembenek, 1999) and can help to achieve the objectives of the course. Similarly course material and its content should be aligned with the course outcomes (Moore & Kearsley, 2011).

The pure sciences study programs are considered to be taught and learnt in conventional educational institutions due to their different requirements (Kearsley, 1995). Virtual university of Pakistan has launched biological sciences programs in distance online education mode for the very first time. Previously, Virtual University of Pakistan offered study programs in social sciences, management sciences and computer sciences. It is unique experiment which requires analysis and evaluation of these study programs in terms of their effectiveness. Therefore, it is required to measure and evaluate the effectiveness of these study programs to find out the efficacy which is mainly dealt in this research study. The perceived effectiveness has been evaluated in this research by collecting the feedback of the students regarding the offered biological sciences study programs.

Methodology

This is descriptive study which is cross-sectional in terms of time. All the enrolled students of biological sciences programs: BS Bioinformatics, BS Biotechnology and MS-Bioinformatics are the population of the study. Data has been collected through a structured questionnaire. The questionnaire used in this research study is developed by Roberts et al. (2005) to measure the effectiveness of online study programs. Robert and his colleagues have developed this instrument through a systematic step wise process. They have first identified different items and then dimensions of each item (Roberts et al., 2005). The responses of the students are recorded through 5-point Likert scale which ranges from strongly disagree to strongly agree.

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Questionnaire has 08 dimensions namely: Learner-Instructor Interaction, Learner-Learner Interaction, Instructor, Learner-Content Interaction, Course Organization, Administrative Support, Technical Support and Delivery Method.

All the enrolled students were sent an online link through IT department of VUP to submit their responses. Anonymity of the respondents was ensured.

Data Analysis

Table 1: Enrollment Statistics

Program	Male	Female	Total
BS Bioinformatics	10	23	33
BS Biotechnology	27	27	54
MS-Bioinformatics	9	11	20
Total	46	61	107

Table 1 shows the enrollment statistics along with gender distribution of students. A total of 107 students are enrolled in the biological sciences programs offered by Virtual University of Pakistan.

Table 2: Respondents' Statistics

Age	BS Bioinformatics	BS Biotechnology	MS Bioinformatics	Total
20-30	21	27	7	55
30-40	0	0	5	5
40-50	0	0	1	1
Total	21	27	13	61

Table 2 shows the composition of respondents of the survey. 61 students participated in the survey out of 107 enrolled students, response rate has been 57% which is good enough to be considered as representative sample. Majority of the respondents were from BS Biotechnology and fell in the age group 20-30 years.

Table 3: Gender Composition of Respondents

Gender	BS Bioinformatics	BS Biotechnology	MS Bioinformatics	Total
F	12	22	5	39
M	9	5	8	22
Total	21	27	13	61

Table 3 provides details of gender distribution, majority of the respondents are females which is a healthy sign in Pakistani culture and it also points out the strength of distance learning to provide opportunities to otherwise deprived groups.

Table 4: Reliability

Dimension	Cronbach Alpha
Learner-Instructor Interaction	0.70
Learner-Learner Interaction	0.64
Instructor	0.90
Learner-Content Interaction	0.70
Course Organization	0.60
Administrative Support	0.35
Technical Support	0.85
Delivery Method	0.86
Overall Reliability	0.87

Table 4 provides the reliability of the questionnaire. Overall reliability of the tool has been good; .87 shows high reliability of the tool. Reliability of all the dimensions has been satisfactory except administrative support.

Table 5: Mean Scores

Dimension	Mean	Std. Deviation
Learner-Instructor Interaction	3.92	0.65942
Learner-Learner Interaction	2.99	0.57367
Instructor	4.09	0.54397
Learner-Content Interaction	3.55	0.70537
Course Organization	3.93	0.55405
Administrative Support	3.75	0.63655
Technical Support	3.79	0.69797
Delivery Method	3.96	0.54425

Table 5 shows mean scores of all the dimensions of the tool used. Highest mean score has been recorded for instructor and lowest mean score has been recorded for interaction of learners with each other.

Discussion

Data show that students from all the three disciplines of Biological Sciences have participated in the survey that makes the sample representative for the study. It is worth mentioning that Virtual University of Pakistan started programs in Biological Sciences in 2014-15 for the first time. These programs are generally offered in class room environment, first time these programs at graduate and undergraduate level have been offered in the distance learning. There has been a myth that these programs can only be taught effectively in conventional teaching mode.

To measure the students' satisfaction/perceptions a questionnaire developed by Roberts et al. (2005) has been used. Following is the discussion on all the 08 dimensions on which data have been collected:

Learner–Instructor Interaction

This dimension measures the student – teacher relationship, how students and teachers interact while teaching & learning take place. It is focused on teacher’s accessibility and availability along with promptness of teacher’s response. Mean score of 3.92 for this dimension shows that there is a good interaction among the teacher and students and teachers are quick enough to respond to students queries.

Learner–Learner Interaction

This dimension pertains to the interactions of the student body within, this is one of the drawbacks of distance learning where students are away from each other and lack a sense of connectedness (Zaheer, 2013). A mean score 2.98 which is the lowest mean score confirms this. Students are separated by time and space so a social binding is not developed.

Learner–Content Interaction

This dimension measures the satisfaction of the students with the content of the course presented according to its level and up to date with course requirements. Mean score of 3.55 is reflection of students agreement with the quality of the content presented.

Instructor

The most important of all the dimensions the instructor here is the teacher who is dealing with the students. Instructor mentors, evaluates and guides the students during a particular course till the final examination. At VUP, an instructor develops and grades assignments, prepares questions for quizzes, develops and grades mid and final term exams, responds students queries in moderated discussion board (MDB) an online class/chat room and replies the emails. Role of an instructor in VUP is of prime importance, he or she runs a course which has been video recorded by the top professors in their field. Instructor also provides all the reading and course material in Learning Management System of VUP. Mean score 4.09 for this dimension is the highest mean score of all the dimensions used in this study. This shows that instructors of VUP are providing up to the mark support to the students to impart quality education.

Course Organization

Course organization refers to the course objectives and outcomes. Mean score 3.93 explains that course objectives and outcomes are well delineated.

Support Services/Administrative Issues

This dimension pertains to the availability of learning resources like library and convenience of registration & course selection procedures. Mean score 3.75 shows satisfactory response of students in this regard.

Technical Support

Being students of online university students of VUP might face issues of login, email, availability of online Learning Management System to submit assignments and quizzes. Technical support here refers to IT support which has yielded a mean score 3.79 which shows that students have been satisfied by the support provided by IT department of VUP.

Delivery Method

Delivery method consists of moderated discussions (effective use of LMS), course material provided on course website, quality of video lectures and PPTs available in a course. A significantly high mean score (3.96) shows that all these things were well managed.

Conclusion

Data collected from 61 students show that students of Biological Sciences at Virtual University of Pakistan perceive their education highly effective. Satisfaction level of students from their instructors has been highest amongst all eight dimensions.

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AN APPROACH FOR DEVELOPING A STUDENT MODEL FOR INTELLIGENT TUTORING SYSTEM: A PRELIMINARY REPORT

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Abstract

Intelligent Tutoring System (ITS), is a process that is used to train a system by capturing the students' learning behaviour and to provide direct modified tutoring or response to students. Although many rapid prototyping of ITSs have been used in the past, there have been a lot of challenges among the pedagogical community to find an appropriate tutoring system. This is because there have been a variety of objectives behind ITS authoring systems, which comprise of four subsystems or modules, such as, the interface module, the expert module, the student module, and the tutor module. Student model plays an important role among these four modules in creating an effective student profile for serving appropriate learning content to the students based on their ability, skill and knowledge. It involves the construction of a representation that accounts for student behavior in terms of existing background knowledge about a domain and about students learning the domain. This paper will discuss about an approach for developing student model for ITS and will present a possible framework for modeling student background knowledge in constructing a student model using Neural network.

Introduction

It has always been a challenging task to build a Web-based Lecture Technologies that best suits the pedagogical community. This is because student's knowledge of understanding differs from a student to student and to design a learning environment that best suit them is a very challenging task. To overcome this issue, one area that is focused more in recent times is the Intelligent Tutoring System (ITS). The four basic components that classically are identified in an ITS are: Domain Module, Pedagogical Module, Student Module, Dialogue Module (Case., Porter., Gyi ., Marshall ., & Oliver, 2001; Yazdani, 2001). According to Woolf (1992), in an ITS the student model stores information that is specific to each individual learner: it concerns "how" and "what" the student learns or his/her errors, and the student model plays a main role in planning the training path, supplying information to the pedagogical module of the system. This component provides a pattern of the educational process using the student model in order to decide the instruction method that reflects the different needs of each student. Therefore, this study is an attempt to find an approach for developing a student model by congregating the learning patterns of the each individual student.

Research Aim and Objective of this Study

This study aims in developing a suitable Student model for any web-based Adaptive Tutoring System (ATS) that is intended to provide independent learning for the pedagogical community. Further, the students' learning behavior will also be analyzed using neural network techniques and further analyzed using psychometric test based on their learning approach and ability.

The main objectives of this study are:

1. To create a Web-based user interface for creating learning content (MCQ) for designing a student model;

2. Attempts to provide suitable learning materials based on the students ability and skills;
3. Analyses the students' learning behaviour using neural network schema;
4. Identifies the most preferred learning pattern by classifying them using psychometric analysis technique and
5. To provide a framework for designing a Student model for integrating it with an intelligent tutoring system.

Research Questions

The following are the research questions:

RQ1: Is there a correlation between the primary data and the secondary data obtained during the process of designing the Student model?

RQ2: Is there a correlation between the dataset obtained from the neural network structure as against the psychometric analytical dataset?

RQ3: What is the learning pattern of the students while taking their test based on their preference?

RQ2: How far the students classification ideally fit into the students expected score during the process of designing the student model?

RQ5: What is the possible frame work for designing a Student model based on the output generated during the course of students profiling process?

Significance of This Study

Intelligence of a Web-based educational system is the capability of demonstrating some form of knowledge-based reasoning in curriculum sequencing, in analysis of the student's solutions, and in providing interactive problem-solving support (possibly example-based) to the student, all adapted to the Web technology (Brusilovsky & Miller, 2001). Thus the importance of this research study is, an attempt, to develop a student model that can play an important role in building an Integrated Tutoring System (ITS) for :

- Collecting some data about the student working with the system and creating the student model;
- Adapting the presentation of the course material, navigation through it, its sequencing, and its annotation, to the student;
- Using models of different students to form a matching group of students for different kinds of collaboration;
- Identifying the students who have learning records essentially different from those of their peers (e.g., the students progressing too slow or too fast) and acting accordingly (e.g., show additional explanations, or present more advanced material).

Further this study encapsulates within the four domains of an ITS system and gives an inference to some of the key point that could be very useful in constructing a student model. For example,

1. What key components need to be used in the current student model?
2. How can a student profile be efficiently generated?

3. How to identify the students' learning behavior patterns?
4. Can tools such as Artificial Neural network (ANN), psychometric analysis and Item Response Theory be useful for the current system under development?

Literature Review of ITS and Student Model and Its Significance

Sleeman and Brown first used the term Intelligent Tutoring System (ITS) in the year 1982 and defined it as being computer-based (1) problem-solving monitors, (2) coaches, (3) laboratory instructors, and (4) consultants. (Sleeman & Brown, 1982). Added to it, a system that provides direct modified tutoring or response to students is ITS. ITS can play major role in a range of different fields or domain. However, those systems are more barely conceived as AI systems. ITS comprise of four subsystems or modules. Such as, the interface module, the expert module, the student module, and the tutor module as shown in figure1.

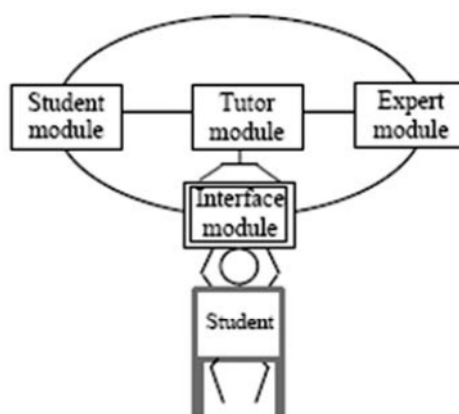


Figure 1: The general architecture of ITS. (Htaik, T.T., & Amnuaisuk, P.S., 2003)

The interface module supports to intend for the students to interrelate with system. Commonly through a graphical user interface. Sometime, through simulation of the task domain for the students' learning. The expert module illustrate knowledge in the subject-mater that ITS is teaching. Moreover, that module addresses an specialist or domain representation controlling a sort of the knowledge of the subject. The student module controls descriptions of student understanding or activities. Also, keep students misconceptions and knowledge gaps. The tutor module holds the knowledge, which is requiring giving the students. This module takes curative action, for example giving feedback or corrective teaching. Toward be capable to achieve this, it requires knowledge about what a human teacher would do in such condition (Htaik, T.T., & Amnuaisuk, P.S., 2003).

In the area of Intelligent Tutoring Systems, the student model is one of the components to be included in an educational system. According to Woolf (1992), in an ITS the student model stores information that is specific to each individual learner: it concerns "how" and "what" the student learns or his/her errors, and the student model plays a main role in planning the training path, supplying information to the pedagogical module of the system. This component provides a pattern of the educational process, using the student model in order to decide the instruction method that reflects the different needs of each student.

The domain knowledge module contains information concerning the subject the tutor is teaching, and the communication module creates the interactions with the learner using, through the pedagogical module, the information contained in the student model in order to render the communication more effective. The information collected on the interaction, suitably elaborated, can modify the student model. That is, data containing each student is initially collected through preliminary tests to estimate the background knowledge, educational goals, motivation, the preferred modalities of communication etc., and then enriched by the logs of the successive

interactions, constitute the training set from which to infer the conceptual user-student models (profiles) (Licchelli et. al, 2003). On the other side, the use of student models to individualize interaction in hypermedia and on-line instruction systems has been described by several authors (Bull et al. 1995; Bull and Smith 1997; Smith and Jagodzinski, 1995), but the application of such techniques to generate effective presentation of instructional material has had little practical success. According to Hartley (Hartley, 1998), the root cause is the lack of dialogue between researchers, whereas others believe that it is the complexity of student models (Cummings 1998; Ohlsson 1993; Self 1990a). Ragnemalm (1996), who distinguishes between models that contain a student's actual domain knowledge and those that contain student characteristics, surveys the range of student modeling approaches available. In the same notion, Vassileva (1996) describes a student model as an example of a general user model, where the student knowledge representation, held in the system, is compared with the domain representation and the expert or desired state representation. The aim of such systems is to compare the student, the domain and the expert models and to attempt to configure information presentation basing upon differences between them, in order to allow the student to reach a desirable knowledge level (educational goal). Added to this, according to Brusilovsky (1996), he faced the problem of developing adaptive hypermedia systems and stated that it is necessary to use some features such as goals, knowledge, background, experience and preferences in order to achieve personalization.

From the above discussion, what seems to be clear is the importance of student model, which proliferate the learning process of an Intelligent Tutoring System. What is even more important is trying to model the student as a user in order to improve the interaction, neglecting the problem of monitoring the educational process (Licchelli et. al, 2003).

In order to identify the learning process of the students and for identifying how students learn, it is important to know their learning style. Keefe (1979) defines learning styles as characteristic cognitive, affective and psychological behaviours that serve as relatively stable indicators of how learners perceive, interact with and respond to learning environments. Several learning styles models have been proposed from early days until now. (Kolb 1984; Myers & McCaulley 1990; Felder & Silvermann 1988; Lawrence 1993; Litzinger & Osif 1993; Felder & Spurlin, 2005). A critical review of learning styles, analysing their reliability, validity and implication for pedagogy, can be found in (Coffield et al. 2004a;b). The authors of this review concluded that in the field of learning styles, there is a lack of theoretical coherence and a common framework (Coffield et al. 2004b, p. 145). In spite of this fact, experimental research on the application of learning styles in computer-based education provides support for the view that learning can be enhanced through the presentation of materials that are consistent with a student's particular learning style (Budhu 2002; Pena et al. 2002; Stash et al. 2004). For example, it has been shown that the performance of students in a simple Web-based learning environment correlates with their self-reported learning preference (Walters et al. 2000). Also, learning style of the students can be recognized by the use of Artificial neural networks (ANNs), based on the actions the students perform in an e-learning environment.

A learning algorithm is the process by which an Artificial Neural Network (ANN) generates internal changes so that it can adapt its behavior in response to the environment. The modifications by the network during this process enable it to gain better performance, so that, it can overcome its output to the environment. When there is an external agent involved in the learning process, it receives the name of supervised learning. Although learning style of the students can be recognized by the use of Artificial neural networks (ANNs) or by using a supervised learning algorithm, for identifying how students learn, it is important to know their learning style and this learning style involves characteristics, such as, cognitive, affective and psychological behaviours that serve as relatively stable indicators of how learners perceive, interact with and respond to learning environments. Therefore, it is also important to know the psychological behaviours using psychometric analysis which serve as relatively stable indicators for accessing the students learning style. In this study, an attempt has been made to enhance the student modelling in a way where it

can present the learning materials for the candidates based on the recent trends, namely, Artificial Neural Network.

Methodology

This research work proposes a Student model which can be integrated to any e-learning environment in which the domain experts and the course creators will upload their prepared material. Based on the uploaded educational resources, the tutors create multiple-choice questions, which are rated by them as Low, Medium, High based on the difficulty levels. The first phase begins with a practice test. The test questions, which are gathered from the test banks, are issued to each candidate in order to observe their level in the specific subjects. From the result of this practice test, the profiles of the candidates are created and it is stored in the storage space (database). In the second phase, according to their individual level of assessment in the practice test, suitable materials (learning contents) are presented to the each candidate. During this stage, Neural Network algorithm is utilized to analyse the students learning pattern, which is further classified using psychometric analysis to classify the students based on their ability, their knowledge and understanding of the topic. This is because, in a multiple-choice based assessment, it is very difficult to make conclusions, just based on the students' scores. Therefore, Item-based response theories will be used to classify the students' level of understanding of the learning content.

Use of Neural Network in Classifying of Student Learning Pattern

After the MCQ practice in phase 1, the data is gathered are subjected to classification of students according their actual level (Low, Medium, High) using Neural Network. Neural network interception plays an important role in deciding what test level the student is going to take during the real test. The neural network therefore has the learning rules set to conquer the actual level by set of examples, which are referred as training set of proper network behaviour:

$$\{x_1, d_1\}, \{x_2, d_2\}, \dots, \{x_n, d_n\} \dots (1)$$

Where (x_n) is an input to the network, (d_n) is the corresponding correct target(desired) output. As the inputs are applied to the network, the network outputs are compared with the targets. The learning rule is then used to adjust the weights and the biases of the network in order to move the network outputs closer to the targets (desired). The corresponding Neural Network design for this phase would be as shown in the Figure 2.

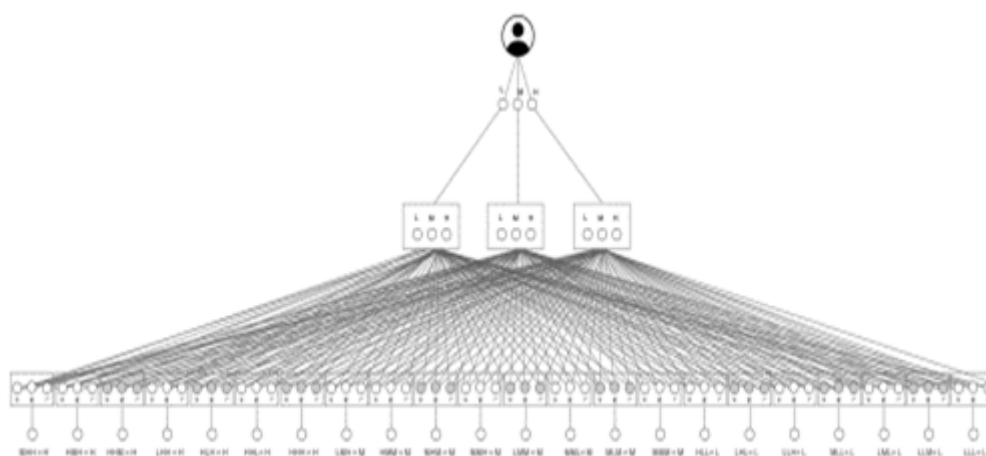


Figure 2: Neural network structure used to find the actual level of the students after practice test

Research Design and Sample

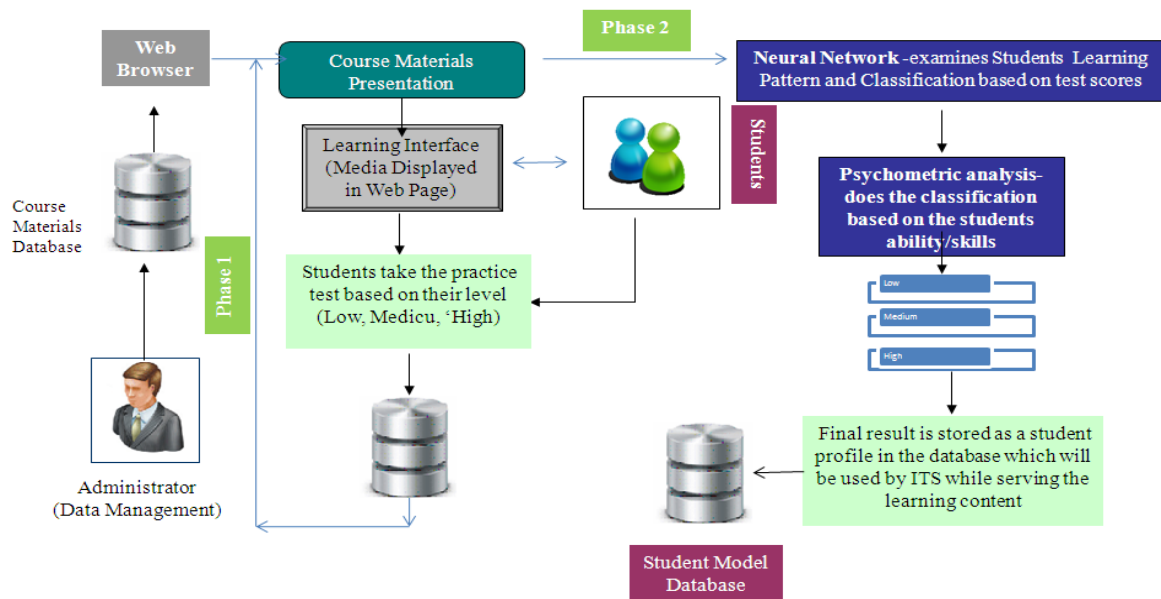


Figure 3: Research design for development of a student model

Population and Study Sample

The population sample for this study would be based on “non-equivalent comparison-group design” ((Marczyk et al. 2005), one of the most commonly used quasi-experimental designs for determining system effectiveness. Therefore, based on the requirements of this design, students those are similar in nature, who have taken physics as one of their subject at pre-university A-level course will be involved in this study. 50 students who are currently doing pre-university A-level course would be involved in testing this online environment which will be sufficiently loaded with 300 MCQ questions and answers.

Source of Data

There will be three sources for gathering data in this study. The primary data will be the “end of semester” final scores of the students in the physics subject, collected from the respective teachers. This data will allow us to classify the students based on their general knowledge in physics domain. This will be followed by a (Phase 1) practice test to assess the actual level of the students before they are exposed to intervention. The secondary data (Phase 2) will be gathered from the developed system after the students are exposed to a real test, which is decided by the proposed system intervention using neural network. This way we substantially reduced the threat of selection bias (i.e., knowledge level of the subject domain) prior to the intervention (Jovanovic, et al, 2009).

Data Analysis

The data gathered from the student intervention from the Online MCQ test portal will be subjected to statistical analysis using SPSS-AMOS. Added to it, the data at the Phase 2 after the Neural Network interception will be tested again the psychometric analysis using Excel spread sheet.

Conclusion

It is the Student module that holds the knowledge of the students in a particular domain. This module takes curative action, for example giving feedback or corrective teaching. To be capable to achieve this, it requires knowledge about what a human teacher would do in such condition (Htaik, T.T., & Amnuaisuk, P.S., 2003). The more a system knows about users the better it can serve them effectively. But there are different styles, and even philosophies, to teach computer about user habits, interests, patterns and preference. It is computationally simple to measure the student's answers and carry out some statistical aggregation procedure. For example, upgrading or downgrading the difficulty of practice items. But it does not provide the level of detail necessary to decide what this student needs right now in order to learn a particular concept, procedure, fact or principle.

Therefore, this research is an attempt to develop a new approach to design a student model for incorporating it within an Intelligent Tutoring System.

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E-LEARNING EFFECTIVENESS AND ATTITUDES OF LEARNERS: EMPIRICAL EVIDENCE FROM OPEN UNIVERSITY MALAYSIA USING PARTIAL LEAST SQUARE

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Abstract

Online universities have played a significant role in developing a knowledge workforce by providing effective e-learning system; where teaching and learning have gone beyond the traditional classroom. This has apparently increased the demand for education; however, certain quarters of the society were still sceptical about the effectiveness of e-learning in delivering knowledge and skill to the workforce. This paper focuses on evaluating the attitude of e-learners towards the effectiveness of e-learning. The questionnaire used in this paper was developed from previous studies. The data is analysed using the partial least squares model. The 126 respondents of this study, collected through the convenience sampling, are learners of Open University Malaysia in the Klang Valley. Applying the exploratory factor analysis, four dimensions are established; namely, attitude, connectivity, interactivity and learning environment. Result of the analysis shows that there are significant relationships between attitude, connectivity, interactivity and the learning environment.

Introduction

In line with Malaysia's vision 2020, online universities play a significant role in developing a knowledgeable workforce through providing effective e-learning system. According to University World News on 26 September 2014, Malaysia is reported as one of the top seven countries in the Asian region, which has a growth rate of 43.7%. The report further added Malaysia's new National eLearning Policy aims to have 30% of all higher education courses delivered online by 2015. Concurrent with the expansion and growth of demand in e-learning, higher education programmes are focusing on teaching and learning that is beyond the traditional classroom (Wu & Hwang, 2009). Previous studies (Rhema & Miliszewska, 2014; Rodriguez & Armellini, 2013) have focused on the effectiveness of e learning, satisfaction, and behaviour of learners. Based on the paper written by Rhema & Miliszewska (2014), it can be synthesised that many scholars agree that technology play an increasing vital role in facilitating the education processes and systems. This is because the e-learning methodology has started to surface in many developing nations where it has the potential to assist in meeting the increase demand for education (UNESCO, 2006).

E-learning Effectiveness

According to Latif et al. (2009), Open University Malaysia (OUM) provides education to the masses who aspire to improve their academic qualification. Content of the courses can be effectively delivered via the e-learning mode. OUM is an advocator of e-learning by applying the blended learning methodology in delivery of knowledge. This encompasses self-learning, face-to-face tutorials, online modules, e-books, and virtual interaction by the use of forums that are effective and can be directly linked to learning styles of students. Factors including ease of access to information, safe digital environment for learners to submit work and interactivity amongst learners have gradually enhanced the effectiveness of e-learning systems in higher education

institutions. In OUM, these factors were also found to have a bit impact on the attitude of learners. The main objective of this study is to examine the perception and attitudes of learners on the effectiveness of e-learning in OUM.

Review on Structural Equation Modelling and Partial Least Square

Every discipline requires reviewing the use of multivariate analysis methods to ensure rigorous research. Even though partial least squares structural equation modeling (PLS-SEM) has been reviewed by many authors before, we will highlight the benefits of using these methods in this paper. The study by Nachtigall et al. (2003) concluded that 60% of respondents in their study are expected to use structural equation modelling (SEM) and partial least square more frequently in the future as data analysis tools. SEM is an advanced multivariate technique used to examine multiple dependence relationships between constructs simultaneously (Oke, 2012; Wang, 2012). Present literature (Alavifar et al., 2012; Leech et al., 2004; Wang, 2012, pg.1) discussed the reasons for researchers to adopt the SEM methodology over other methods. Based on the strong reasons provided by Wang (2012, pg. 1), traditional methods such as multiple regression violates the basic assumptions of statistics, which is to ignore the measurement error of variables included in the model when the independent variable is correlated to the model residuals. In the opinion of the methodologist, the results obtained in a regression test maybe biased and may lead to incorrect summary. Thereafter, in an SEM method, the total model is tested instead of individual coefficients.

In light of the above discussion, it clearly shows that SEM is an extension of regression analysis and this tool is able to overcome the weaknesses of regression analysis. Secondly, SEM can provide the accuracy of model by integrating functions in a single umbrella (Bagozzi & Yi, 2011; Nachtigall et al., 2003), examining the reliability of measures in tests of hypothesis (Bagozzi & Yi, 2011), overcoming the problem of non-normal data (Oke, 2012). Partial Least Squares (PLS) is a data analysis method for testing theoretical relations among a system of constructs, closely related to Structural Equation Modeling (SEM). PLS and SEM complement each other. Many other papers have combined both techniques while exploring the circumstances where one might be better suited than the other. However, we will present a PLS-SEM model in this study.

Research Design

The research questionnaire was developed from previous literature. Quantitative methodology is adopted by the researchers because causality between constructs can be clearly justified by using quantitative methodology. The process of content validity and convergent validity were also undertaken in this study. After referring to the literature and constructing the measurements of the variables, qualitative methodologies were used to ascertain content validity. Based on the discussion of Timm et al. (1994), qualitative data can help gather information on sensitive issues and nonverbal cues. Another benefit according to Schostak (2005, pg. 146) is that qualitative methods can assist researchers to achieve internal validity through interview techniques. In light of the above elaboration, an interview was conducted with a professor to fine-tune the items in the questionnaire before distributing it to the final respondents. Items were added, deleted, and modified in the interview process based on the recommendation given by the professor.

The respondents of this study are learners of Open University Malaysia (OUM) in Klang Valley. A number of 126 usable replies were obtained from a convenience sampling prior to performing all the analyses. The response rate is quite similar to previous studies (Ingec, 2014; Kara, 2009) conducted in this area. The sample size requirement recommended by Yamane (1967) is 100 for 10% confidence interval that can represent a total population of above 100,000 people. The total population of OUM learners are above 100,000 and based on the requirement of Yamane (1967), the sample size is sufficient to answer the hypotheses. Moreover, 100 observations are sufficient to perform a factor analysis according to Bartlett et al. (2001). A total usable response of 126 in this

study is therefore sufficient for a factor analysis and modelling to be conducted. Face-to-face methodology of data collection was used to enhance the response rate.

Methodology

The one way ANOVA performed on a sample of 119 students in Ingec (2014) indicated that way of learning; way of the studying and learning methods had significant impacts on the students' attitudes towards e-learning. In agreement, Odeshi (2014) has performed a One-Way ANOVA and paired T-test in testing his hypothesis. The results of his study showed that learners have a positive attitude towards e-learning because they find the system easy to use and useful for their course work. In another study, Kara (2009) obtained data from 150 participants and performed analyses such as t-tests and correlation tests. Her results suggested that participants with better understandings of the learning process are better at perceiving the nature of learning, more open to learning, have higher expectations about what they will get from learning. In another research, the qualitative case study methodology has also been used by Rhema & Miliszewska (2014) in Libya to discuss learners' attitudes towards e-learning. As stated earlier, this paper focuses on the attitudes of learners towards the effectiveness of e-learning. Adopting a new method into an existing area is a justification of originality as suggested by Phillips (1993). Thus, the main contribution of this paper will be in terms of filling in the methodological voids in the area of interest. The PLS-SEM will be offered in this paper to extend and build knowledge in the area. This methodology will broaden the existing knowledge offered by previous studies like Ingec (2014), Odeshi (2014) and Rhema & Miliszewska (2014). There is limited evidence that learners attitude on effectiveness on e-learning have been tested through the structural equation modelling approach which will be narrowed by this present paper.

Descriptive Analysis

SPSS software and SmartPLS software were used for data assessment by the researchers of this study. Descriptive analysis was performed using mean analysis mainly. Mean analysis is a statistical technique that is used in illustrating the important variations among groups of data. The mean age of respondents of this study is 33, which shows that the learners are mostly in their prime age. In terms of gender, the ratio of male (32%) to female (68%) is quite ordinary. This is because OUM has more female learners and the descriptive statistics is representative here. Majority (72%) of the respondents are undertaking bachelor programmes in this university. The average CGPA as indicated in the analysis is 2.94. The learners of OUM have been technology savvy for more than 6 years and averagely spend about 7 hours a week on learning via the online method.

Normality and Reliability

In the initial stage of data cleaning, assumption on normality of sample distribution was justified. Kurtosis test was performed on all the items. The Kurtosis test is useful in determining the existence of outliers where the value should be below 3.80 according to Lei & Lomax (2005). Two items were deleted to ensure that the assumption of normality is not violated at the preliminary stage of data analysis. According to Bagozzi & Yi (2011), researchers are required to perform factor analysis in view of establishing the unidimensionality of the indicators. In this rigorous process recommended by them, a set of indicators measuring a single factor is to be formally tested primarily. Table 1 in this paper portrays the results of factor analysis. Four dimensions are established in the factor analysis and they are named as 1) attitude 2) connectivity 3) interactivity and 4) learning environment. The creation of these new constructs through an exploratory factor analysis is a contribution of this study to the area of interest.

Internal consistency is used to justify the credibility of the findings (Collis & Hussey, 2003, pp58). As articulated by Zohrabi (2013), one of the requirements in a quantitative study is to report the reliability indices. In summary, reliability is consistency of measurement or stability of measurement over a variety of conditions in which same results should be obtained (Nunnally, 1978). As recommended by previous methodologists, Cronbach alpha (Nunnally, 1978; Zikmund et al., 2010) will be used to justify the reliability of the constructs. Zikmund et al. (2010) have recommended a cut-off point of 0.80 whereas Nunnally (1978) suggested 0.70 should suffice in reporting reliability. Attitude ($\alpha = 0.90$), connectivity ($\alpha = 0.84$), interactivity ($\alpha = 0.82$) and learning environment ($\alpha = 0.84$) are hereby reported for reliability indices. After confirming the normality, validity and reliability, this paper will further present the structural equation model to answer the research hypotheses in view of satisfying the research objective.

Table 1: Exploratory Factor Analysis

	Rotated Component Matrix				
		Component			
		1	2	3	4
	ATTITUDE				
C6	E-learning is interesting	.849			
C4	I enjoy e-learning lessons	.846			
C7	E-learning method motivates me to be a better learner	.834			
C3	I will recommend e-learning courses to my friends	.734			
C2	E-learning courses allow me to control the pace of my learning	.634			
C1	E-learning instruction is convenient	.605			
	CONNECTIVITY				
B2	Faster Internet connectivity/improved bandwidth		.725		
B1	Availability of hardware (particularly computers)		.703		
B4	Appropriate policies favouring e-learning		.649		
B6	Lower prices for connectivity		.625		
B18	Re-use of content		.501		
B9	Appropriate language		.460		
	INTERACTIVITY				
B16	Interactivity between learners and teachers			.754	
B15	Interactivity amongst learners			.752	
B17	Quality education for increasing numbers of students			.555	
B19	Management of student records			.515	
B11	Improved training for teachers in e-learning at all levels			.492	
	LEARNING ENVIRONMENT				
B12	Ease of access to information				.814
B13	Ability to supervise learners at a distance				.710
B14	Safe digital environment for students to submit work				.620

Analysis Using Partial Least Square

The figure below shows the structural equation model performed using the partial least square method. The 126 replies were bootstrapped to 5000 observations prior to answering the hypothesis. Hayes & Scharkow (2013) have recommended the bias-corrected bootstrap confidence interval as the most trustworthy test, although it can be slightly liberal in some circumstances. Bootstrapping helps in defying the limitations of data collection and improving the results in a quantitative study. The hypotheses statement and findings are portrayed in Table 2 of this study.

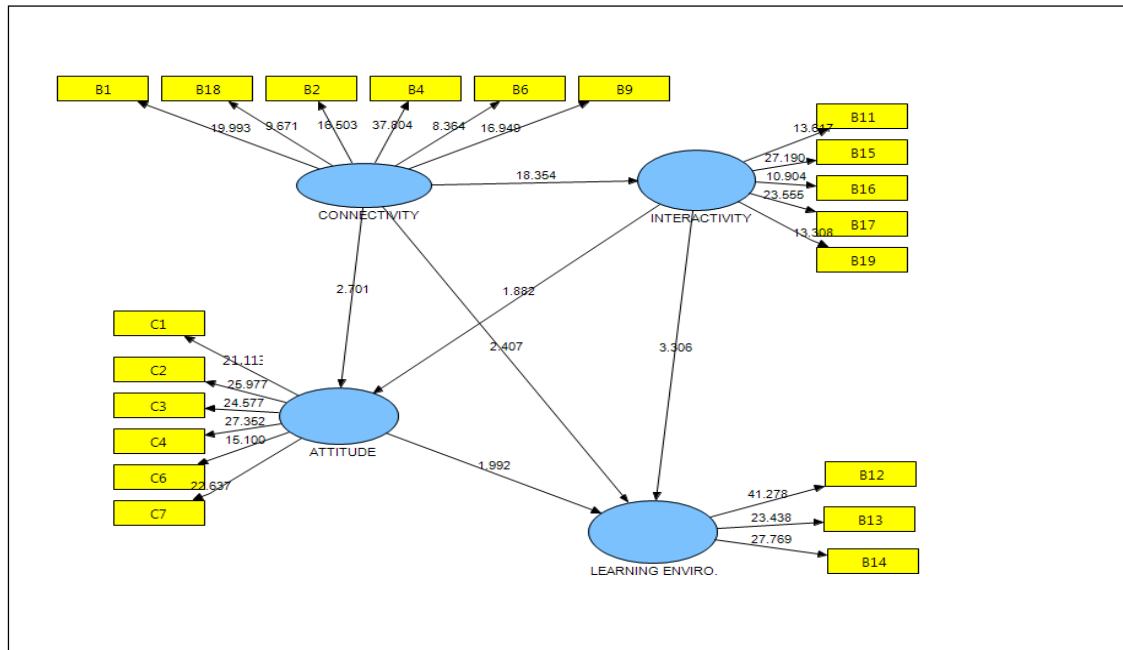


Figure 1: Partial Least Square Model

Table 2: Indices of the Structural Equation Model

No	Hypotheses statement	t-value	p-value	Results
H1	There is a relationship between connectivity and interactivity	18.35	0.01	Supported
H2	There is a relationship between connectivity and attitude	2.70	0.01	Supported
H3	There is a relationship between connectivity and learning environment	2.41	0.01	Supported
H4	There is a relationship between interactivity and attitude	1.88	0.03	Supported
H5	There is a relationship between attitude and learning environment	1.99	0.02	Supported
H6	There is a relationship between interactivity and learning environment	3.31	0.01	Supported

Discussion of Hypotheses

H1: There is a relationship between connectivity and interactivity

Good internet connectivity can increase peer interaction and collaboration when exploring new knowledge. Real time support and feedback can be obtained amongst the learners if the bandwidth of internet is fast and effective. In addition, management of student record is an item that measures interactivity in an ODL environment. Availability of effective hardware and computer can also help in management of student record. Record management in an education institution is a key process that underpins strategic forecasting in operational activities.

H2: There is a relationship between connectivity and attitude

The finding of this paper is consistent with the results of Rhema & Miliszewska (2014). Satisfactions with technology can improve attitude and satisfaction of the students. Appropriate policies of connectivity favouring e-learning can motivate the learners because they can control their learning process. Other items (re-use of contents and use of appropriate language) that measure connectivity in the structural equation model are the factors that learners look for when recommending the courses to their friends. Thus, it can be also implied that proper connectivity improves the profit margin of an institution.

H3: There is a relationship between connectivity and learning environment

The review of Odeshi (2014) explained that the reasons that influence learners' belief about e-learning can assist the institution to create mechanisms for enhancing the learning environment. Effective internet connectivity is one factor that can influence the believe of learners because it helps to create a positive learning environment. Hence, information can be easily accessed and supervision can take place even if the distance is remote. Most importantly, learners in OUM need good internet connectivity because the assignments are downloaded, completed, and submitted in through a digital environment. The structural model confirms this process.

H4: There is a relationship between interactivity and attitude

Altogether the result from the structural model suggests significant relationship between interactivity and attitude, narrowing the methodology gap in this area of study. The training and development of teachers will bring quality education for the increasing numbers of the students in ODL. Hence, teachers who are developed will ensure that they give proper feedback when it comes to assessment and they will encourage learners to keep up with the materials (eg reading the modules and participating in the e-forum). As a result, the attitude of learners will be affected. E-learning becomes more interesting and learners will enjoy their lessons.

H5: There is a relationship between attitude and learning environment

Providing an encouraging learning environment is one of the greatest challenges ODL institutions must have to face at the present time. From the quantitative data obtained, it is proven in the model that attitude and learning environment are significantly causal. There is a considerable amount of research on attitudes towards learning (Kara, 2009), nevertheless, this study has filled in the methodological gap by presenting a structural equation model. There are two explanations for this hypothesis. Relative to the findings, 1) access to information can always interest and motivate the behaviour of learners and 2) ODL is able to provide convenience to learners because supervisors and teachers can still deliver knowledge beyond time and space. The findings of this paper is consistent with the result of Odeshi (2014) who stated that if there is easy accessibility to e-learning system then there would be favourable attitudes towards its usage.

H6: There is a relationship between interactivity and learning environment

Interactivity incorporates social networking into course delivery. Learners entering the ODL institutions are expected to use the virtual learning environment, being an integral part of their education. Interactivity among learners and tutors strictly depend on the ability of all parties to access to information. This is supported by the findings disclosed in the structural equation model. Thus, the significant causal relationship is explained.

Suggestion and Conclusion

The researchers have arrived to two suggestions for future study. The following model can be tested using qualitative interviews with senior professors in view of finding depth in explanations. Secondly, the constructs in this study should be validated using confirmatory factor analysis. Future researchers will be able to expand knowledge in this area using different types of validated measurements. It is noted from the analysis that all that constructs in this study are very much interrelated amongst each other. In order for e-learning to be effective, the university should take into consideration the attitude of learners in improving the delivery of its courses.

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E-LEARNING AND STUDENT SATISFACTION

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Abstract

Purpose of the study was to measure the satisfaction of students studying in e-learning mode in Pakistan. A structured questionnaire was used to measure student satisfaction around eight dimensions namely: Assessment, Course Content and Organization, Instructor, Learning Environment and Teaching Methods, Learning Resources, Quality of Delivery, Student Contribution and Tutorials. 21608 students participated in the study out of which 65% were males and 35% females. Majority of the respondents belonged to 17-30 years of age. Reliability of all subscales (between 0.850 to 0.980) and overall scale were found higher, that substantiated the reliability of the instrument. Survey reveals that students are highly satisfied by the e-learning education provided by the university. Instructor support yielded highest mean score (3.76) and tutorial support received lowest mean score (3.50); on a 05 point Likert scale these scores are appreciative. Results indicate that majority of the students are satisfied from the education received in e-Learning mode which shows e-learning has a lot of potential in augmenting higher education in a country like Pakistan where capacity of higher education institutes is limited.

Key word: *e-Learning, Student Satisfaction, Higher Education*

Introduction

Distance learning is gaining wider acceptance and has become a viable alternative of conventional classroom teaching. As distance learning offers the benefits of low cost, wider access and shared resources, institutions offering traditional classroom education have also opted for distance learning courses along with their traditional courses (Zaheer, 2013). Apart from the benefits that distance learning offers, there are certain issues that students face, for example they don't have formal/regular classes where they can go and discuss conceptual issues of different subjects and lack of social and emotional connectivity (Zaheer, 2013).

There are many dimensions, on which researchers assess the quality of education imparted, one of the most important dimensions of education is students' perspective; how they perceive the quality of the education they receive? And this becomes even more important when we talk about distance learning or e-Learning where there is no or little physical interaction between student and teacher. This study is conducted in Virtual University of Pakistan (VUP) which is the first and largest ICT based university of Pakistan offering education via e-Learning. VUP offers programs in Computer Science & IT, Management Sciences, Social Sciences and Biological Sciences.

Objective of the Study

This study is aimed at measuring student satisfaction with e-learning environment in the first ICT based University of Pakistan, Virtual University of Pakistan.

Research Questions

Based on research objective of the study following research questions are used to achieve study objective:

1. How much satisfied are the students with the "Assessment" mechanism in the courses studies in e-learning?
2. How much satisfied are the students with the "Content and Organization" in the courses?
3. How much satisfied are the students with the "Instructor Support"?
4. How much satisfied are the students with the "Learning Environment and Teaching Methods" experienced in e-learning programs?
5. How much satisfied are the students with the "Learning Resources" available?
6. How much satisfied are the students with the "Quality of Delivery" of lectures?
7. How much satisfied are the students with their "Contribution" in the courses studied?
8. How much satisfied are the students with the "Tutorial Support" provided by instructors?

Literature Review

Satisfaction is defined as a person's attitude or feelings associated with various factors that are affecting a particular situation (Bailey & Pearson, 1983). Student satisfaction is more precisely conceptualized as students' perception developed from the perceived value of education and experience gained at an educational institute (Astin, 1993). In the field of human-computer interaction, it is generally envisioned that user satisfaction is the manifestation of affections achieved from communication (Mahmood, Burn, Gemoets & Jacquiz, 2000). The concept of user satisfaction represents the level of conformity between information system employed by the users and their requirements (Cyert & March, 1963).

Students spend substantial time, effort and money in order to obtain education of higher quality and thus distinguish their educational experience as being of higher value. Being an important “intermediate outcome”, satisfaction influences the motivation level of students (Chute, Thompson, & Hancock, 1999; Donohue & Wong, 1997) and this motivation has always been considered as one of the most important psychological factors in academic success (American Psychological Association [APA], 1997).

E-Learning involves the deliverance of information by using telecommunication technology in order to educate and train. In today’s education system, e-learning has become an emerging paradigm owing to the enormous advancement in communication and information technology. Features of e-learning encompass all the requirements of learning in modern age and e-learning has got a greater demand among businesses and higher education institutes owing to this particular quality. By offering all of its courses online, MIT (Massachusetts Institute of Technology) has conveyed the strategic importance of e-learning to all higher education institutes (Wu, Tsai, Chen, & Wu, 2006).

Studies on Information System reveal that one of the most important aspects while evaluating the success in the implementation of the system is user satisfaction (Delon & Mclean, 1992). Several factors contribute in users’ satisfaction in an e-learning environment, which may include teacher, student, course, system design, technology, and environmental aspects (Arbaugh, 2002; Arbaugh & Duray, 2002; Aronen & Dieressen, 2001; Chen & Bagakas, 2003; Hong, 2002; Lewis, 2002; Piccoli, Ahmad, & Ives, 2001; Stokes, 2001; Thurmond, Wambach, & Connors, 2002).

Course design and structure are considered as a crucial elements pertaining to students’ satisfaction in e-learning. Choy, McNickle, and Clayton (2002) have inferred following 10 services that are most expected by the students: (i) complete information about the completion requirements of the course/module; (ii) comprehensive information regarding the courses; (iii) confidentiality of personal credentials on the institute’s database; (iv) clear statements regarding the expectation of students about learning; (v) helpful response from teachers; (vi) requisites for evaluation; (vii) interaction with teachers by using a variety of methods i.e. face-to-face, email, online chat; (viii) prompt response from teachers; (ix) guidance regarding whom to approach for help; and, (x) guidance regarding the enrollment.

Further, researchers have found in follow-up interviews that “three key areas that students perceived as being essential. . . [including] regular contact with teachers, quick response from teachers and regular support for learning” (Choy, McNickle, & Clayton, 2002). The students in this study noticed that there is a need of improvement not only in teacher facilitation but also in technical systems. Hara and Kling (1999) found the factors including lack of quick feedback, technical problems, and ambiguous course instructions lead towards student frustration and dissatisfaction. McNickle and Clayton (2002) revealed that course should be designed in such a way that it should encourage not only a student’s discipline but also his/her consistent approach to work.

Powers & Rossman (1985) found that student satisfaction is highly influenced by peer interaction, student-faculty interaction, and a sense of academic inspiration of both the student and the students’ peers. The studies of online courses at graduate as well as undergraduate level also revealed these features of students’ satisfaction (Diekelmann & Mendias, 2005; Rosenfeld, 2005). Research studies conducted on online courses have also identified certain issues including prompt and helpful communication with the instructor; clear guidelines with respect to course expectations; support regarding enrollment; student assignments and requirements; and, data security. These issues may raise students’ satisfaction if addressed properly (Choy, McNickle & Clayton, 2002; Hara & Kling, 1999; Vonderwell & Turner, 2005). The said areas can be categorized into issues dealing mainly with program contents and delivery.

An instructor is the one who can best predict as far as course satisfaction is concerned (Finaly-Neumann, 1994; Williams & Ceci, 1997). That is why, performance of instructor is found highly correlated with students' satisfaction, particularly with his or her response time and availability (DeBourgh, 1999; Hiltz, 1993). Instructors must not only be available but also be flexible enough to address the students' questions most of the time (Moore & Kearsley, 1996). An instructor is supposed to act not only as a facilitator of learning but also a source of motivation for the student as his/her feedback is considered as one of the most important factors in satisfaction (Finaly-Neumann, 1994). Instructor's timely feedback on assignments keeps the learners involved as well as motivated (Smith & Dillon, 1999). Communication on regular basis must be carried out (Mood, 1995); otherwise, students can face a greater level of frustration (Hara & Kling, 2000). In addition, feedback also provides students an opportunity to revise their assignments which ultimately leads towards the reinforcement of concepts.

Mood (1995) is of the view that goals and objectives of the course must be conveyed clearly to the students at the commencement of the semester. It will help the students in reducing the anxiety as they will be aware of what is expected from them and what exactly they have to do. Instructors can play a vital role in this particular regard by encouraging students to participate, providing them updated information and monitoring student progress.

For successful completion of the course, online learners must be well acquainted with the technology being used (Belanger & Jordan, 2000). In distance learning, student satisfaction is mainly influenced by the availability of the access to the technology (Bower & Kamata, 2000). Generally those students are not found satisfied who experience frustration while using technology in the course (Chong, 1998; Hara & Kling, 2000).

Gunawardena & Zittle (1998) inferred that, in virtual environment, collaborative learning tools are crucial in improving students' satisfaction. These tools help the students to work in groups and provide prompt feedback. In online learning environment, students have the edge to share their viewpoints and have discussion with one another. It allows them to gain insight on a particular topic that would not have been possible otherwise.

Another essential factor that influences satisfaction and learning effects in e-learning is quality (Piccoli et al., 2001). Cooperative or constructive learning model advocates that learners can establish conceptual knowledge and high-level thinking models by employing media presentations and interactive communication furnished by IT (Leidner & Jarvenpaa, 1995). The virtual features of e-learning help learners motivating continuous online learning and formulating learning models effectively. These features include management of learning processes, online interactive brainstorming, and multimedia presentation for course contents (Piccoli et al., 2001). Hence, quality is also considered as an important factor in learner satisfaction.

Alongside, proper feedback techniques are also significant in e-learning environment. Thurmond et al. (2002) found a considerable influence of environmental variables such as perceived interaction with others and diversity in assessment on e-learning. Different evaluation techniques are employed in an e-learning system, which make the students believe that they are maintaining a regular connection with their instructors and their academic efforts are being assessed properly.

Several researches have depicted that interactive instructional design in distance learning is a key element for students' success in learning (Hong, 2002; Jiang & Ting, 1998; Nahl, 1993; Schwartz, 1995). Interactive mechanisms must be designed effectively in e-learning environment in order to enhance learners' satisfaction in terms of quality, frequency and prompt interactions.

Both academically and practically, e-learner satisfaction has been widely assessed in terms of its effectiveness in order to make successful learning environments (Alavi, 1994; Alavi, Wheeler, & Valacich, 1995; Wang, 2003; Wolfram, 1994). This study is an attempt to investigate the factors that influence students' satisfaction in an e-learning environment, Figure 1 summarizes these factors below.

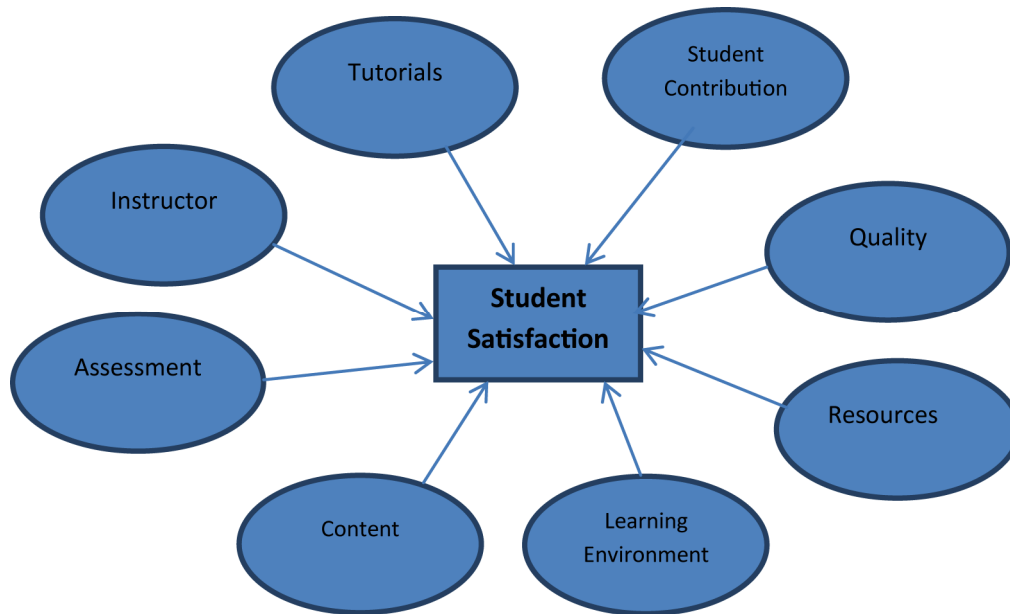


Figure 1: Factors affecting student satisfaction in e-Learning

Methodology

Objective of the study was to measure the students' satisfaction with e-learning experience. For this purpose a cross-sectional survey design was used. Instrument of data collection was a questionnaire provided by Higher Education Commission of Pakistan (HEC) which is the regulatory body of higher education in Pakistan. Questionnaire was adapted according to e-learning requirements around eight dimensions namely: Assessment, Course Content and Organization, Instructor, Learning Environment and Teaching Methods, Learning Resources, Quality of Delivery, Student Contribution and Tutorials were used. Questionnaire comprised of 45 items encompassing these 08 dimensions/factors. Responses were recorded on a 05 point Likert scale ranging from strongly disagrees to strongly agree. Mean Score has been used to measure students' satisfaction for each dimension. Questionnaire was available to students electronically using Learning Management System (LMS) to more than 30,000 students. 21608 students participated in the study.

Results and Discussion

Table 1: Reliability

Variables	Items	Reliability
Course Content and Organization	7	0.921
Student Contribution	4	0.855
Learning Environment and Teaching Methods	5	0.913
Learning Resources	4	0.903
Quality of Delivery	3	0.892
Assessment	7	0.947
Tutorial	2	0.950
Instructor	13	0.970
Complete Instrument	45	0.986

Table 1 shows the reliability of the instrument. There were 05 subscales (for 08 dimensions), questionnaire consisted of 45 items in total, reasonably high reliability was recorded for each subscale ranging from 0.855 to 0.97 and an overall reliability of 0.986 show that the instrument yielded consistent results and we can rely on the results of this instrument.

Table 2: Demographic Distribution

	Frequency	Percent
Male	13950	64.6
Female	7658	35.4
Total	21608	100.0

Table 2 shows the male/female participation, it is encouraging that 35.4% of the participants were females. Number of females in all walks of life in Pakistan is increasing. E-learning/distance learning gives an added opportunity to females of far areas to study where formal higher education institutions are not available. This is one of the prime benefits of distance learning, especially in the cultural backdrop of Pakistan where parents in small areas are hesitant to allow females to go outside for study. VU has broken this barrier and female participation is increasing in higher education via e-learning.

Table 3: Age Distribution of Participants

Age Group	Frequency	Percent (Rounded 2 Decimals)
17-20	3971	18.40
21-25	9357	43.30
26-30	4488	20.80
31-40	3128	14.50
41-50	576	2.70
>50	88	0.40

Table 3 shows that almost 83% of the students are between 17-30 years of age, which shows a very positive trend that young persons are studying in e-learning. It can also be inferred that a significant number of students belongs to working class which is understandable that e-learning enables these students to study in a flexible environment.

Table 4: Mean Scores of Subscales

Variables	Sample	
	Mean	CV
Course Content and Organization	3.70	.23
Student Contribution	3.65	.24
Learning Environment	3.72	.23
Learning Resources	3.73	.23
Quality of Delivery	3.72	.24
Assessment	3.74	.23
Tutorial	3.50	.28
Instructor	3.76	.22

Questionnaire consisted of 08 subscales and used 05 point Likert Scale, following is the table showing score of each point of Likert scale:

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1	2	3	4	5

Table 4 provided Mean Scores of all the dimensions of the questionnaire.

Course Content and Organization

This includes quality of the content and study material provided by the instructor in LMS to facilitate the learning of the students along with clear course objectives. It also includes the overall workload for the course. A mean score of 3.70 has been recorded for course content and organization, which shows that students' perception regarding course content and its organization is quite positive and they consider it effective.

Student Contribution

Student contribution refers to participation in course activities, watching video lectures, perceived progress and consulting provided material. A mean score 3.65 has been recorded which again shows that students are positively contributing in e-learning environment.

Learning Environment

Learning environment is defined as teaching & mentoring methodology, perceptions regarding e-learning environment, availability of video lectures in different media. A high mean score 3.72 was gained on this dimension which shows that students do appreciate the availability and flexibility of e-resources.

Learning Resources

Learning resources dimension refer to availability, utility and relevance of provided content in the courses by the university. A high mean score 3.73 was recorded for this dimension which shows that students were quite satisfied from the availability and quality of the provided e-resources for learning.

Quality of Delivery

This pertains to the quality of the content of video lecture in attaining the interest and stimulating learning among students. Mean score of 3.72 shows students' high satisfaction with this dimension.

Assessment

Assessment consists of formative and summative assessments which include assignments, quizzes, graded discussions and Mid and Final term exams. Reasonably high mean score of 3.74 shows that students are quite satisfied by the evaluation of their teachers. Due to its customized and advanced Learning Management System (LMS) Virtual University of Pakistan has the resources and capabilities to cater the needs of large number of students. Assignment and graded discussion boards are timely graded and students are provided due feedback which adds to their learning and enhances satisfaction. VUP's examination system is also state of the art, students can schedule their exams themselves in a specified time period by choosing date and city, each student gets a unique, system generated paper which ensures quality of assessment.

Tutorial

Tutorials are teacher-student interaction using ICTs. This has yielded least mean score 3.50 of all dimensions this shows that tutorial support at VUP needs to be strengthened.

Instructor

Instructor is the teacher who provides guidance and mentoring to the students via Moderated Discussion Boards (MDBs), tutorials, emails and other means. Students seem highly satisfied by the available instructor support. Highest mean score 3.76 of all dimensions depicts that instructors are doing well to provide guidance to students in their courses.

Conclusion

21608 students participated in the study out of which 65% were males and 35% females. Majority of the respondents belonged to 17-30 years of age. Reliability of all subscales and overall scale were found higher, that substantiated the reliability of the instrument. Survey reveals that students are highly satisfied by the e-learning education provided by VUP. Instructor support yielded highest mean score (3.76) and tutorial support received lowest mean score (3.50); on a 05 point Likert scale these scores are appreciative.

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EXPLORING COMMUNICATION-RELATED FACTORS ON THE USE OF SOCIAL MEDIA AS A LEARNING TOOL AMONG DISTANCE LEARNERS

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Abstract

Social Media has dramatically changed the way people communicate with each other. Today, communication with other people across the world is just a click away through the use of this technology. Nowadays, everyone is into Social Media. Our presence in the Social Media becomes a necessity and somehow dictates how other people see our existence. It is as if we don't exist if we are not in the Social Media. The notable popularity of the Social Media is drawing a significant attention in the academe especially on its use as a tool for learning. The role of Social Media in education dramatically revolutionized the way tools are used to deliver education in today's extremely technology savvy learners. This study explored the communication-related factors affecting the use and adoption of Social Media as a learning tool among the distance learners of the UPOU Faculty of Information and Communication Studies. In general, the study aimed to determine and assess communication factors related to the use of Social Media as a learning tool among the students. To determine the communication factors related to the use of Social Media as a learning tool among the distance learners, the Technology Acceptance Model (TAM) was used as the basis for the conceptual framework. Students' socio-demographic characteristics, information seeking and sharing preferences, source accessibility and frequency of use related to the use of Social Media were assessed while the students' perceived attributes and attitude towards the use of Social Media as a learning tool were observed and measured. Data was collected using the survey research design technique. Descriptive analysis was used to describe the relationship of the variables using frequencies, percentages and means. The data collected were analyzed using Statistical Packages for Social Science (SPSS). This study aims to contribute to a growing number of studies on the use of Social Media as a learning tool for distance education. This study hopes to find answers to questions concerning the factors affecting the students in their use and adoption of Social Media as a learning tool. Aside from this, future researchers will be given information on the characteristics of the distance learners, their reasons for using Internet and Social Media tools, communication participation patterns and other factors influencing them to adopt Social Media as a learning tool. This would help those who are in the university administration to create a more efficient and appropriate programs for the students. This would also help those who are in the policy-making sectors to formulate guidelines and policies towards a more responsive student body. This study will also serve as baseline information and groundwork for future researchers on the emerging concept of Social Media as a learning tool. This study also aims to contribute to future researches and communication-related projects through any usefulness of the variables that may be found in this study.

Introduction

Social Media has dramatically changed the way people communicate with each other. Today, communication with other people across the world is just a click away through the use of this technology.

Nowadays, everyone is into Social Media. Our students used them all the time. Our friends and family communicate with us through Social Media. We communicate through Social Media all the time. Our presence in the Social Media becomes a necessity and somehow dictates how other people see our existence. It is as if we don't exist if we are not in the Social Media. Some industry gurus claim that if you don't participate in Facebook, YouTube and Second Life, you are not part of the cyberspace anymore (Kaplan & Haenlein, 2010).

The emergence of internet-based Social Media has made possible for one person to communicate with hundreds or even thousands of other people about products and the companies that provide them (Mangold & Faulds, 2009). The current trends toward Social Media can therefore be seen as an evolution back to the Internet's roots, since it re-transforms the World Wide Web to what it was initially created for: a platform to facilitate information exchange between users (Kaplan & Haenlein, 2010).

The popularity of a wide range of social software particularly with young people, has led many educators to think that this practice and enthusiasm could be turned to educational use (Mason & Rennie, 2008). The role of Social Media in education has drawn significant attention in recent years as it revolutionized the way tools are used to deliver education in today's extremely technology savvy learners.

Social Media not only provides educators with an opportunity to engage learners in the online classroom but also to support development of learner skills and competencies (Blashke, 2014) and to provide an effective channel to reach out to students and close the generation gap (Balakrishnan,). The one-dimensional way of learning is way over.

Social Media and the Web 2.0 tools are the enablers that bring the learning community together, however it is defied by the learner, and provides the framework that allows students and teachers to harness the power of collaborative, personal learning (Powers, etal, 2012).

Knowledge is no longer acquired in a linear manner, and there is a need to derive our competence from forming connections with other people (Mason & Rennie, 2008). In today's environment, Social Media networks enable students to define what and how they want to learn as they choose their own tools, pursue their own content, and establish social networks to help support them (Powers, etal, 2012).

Objective of the Study

The purpose of this study is to determine and assess the communication-related factors on the use of Social Media as a learning tool among distance learners.

Specifically, this study sought to determine the socio-demographic characteristics of the students who access Social Media, explore the students' information seeking and sharing measures, level of accessibility to the source and frequency of use of Social Media, perceived attributes of Social Media, attitude towards the use of Social Media as a learning tool. It also aimed to investigate possible significant relationship between the variables and the students' use of Social Media as a learning tool.

Research Questions

This study aimed to address the main problem, "What are the communication-related factors that affect the use of Social Media as a learning tool among distance learners?"

Specifically, this study aimed to answer the following questions:

1. What are the socio-demographic characteristics of the students who access Social Media?
2. What are the students' information seeking and sharing measures?
3. What is the students' level of accessibility to the source and frequency of use of Social Media?
4. What are the students' perceived attributes of Social Media?
5. What is the students' attitude towards the use of Social Media as a learning tool?

6. Is there a significant relationship between the variables and the students' use of Social Media as a learning tool?

Significance of the Study

This study aims to contribute to a growing number of studies on the use of Social Media as a learning tool for distance education. This study hopes to find answers to questions concerning the factors affecting the students in their use and adoption of Social Media as a learning tool. Aside from this, future researchers will be given information on the characteristics of the distance learners, their reasons for using Internet and Social Media tools, communication participation patterns and other factors influencing them to adopt the Social Media as a learning tool. This would help those who are in the university administration to create a more efficient and appropriate programs for the students. This would also help those who are in the policy-making sectors to formulate guidelines and policies towards a more responsive student body.

This study will also serve as baseline information and groundwork for future researchers on the emerging concept of Social Media as a learning tool. This study also aims to contribute to future researches and communication-related projects through any usefulness of the variables that may be found in this study.

Literature Review

Defining Social Media

Social Media is defined by Mangold & Faulds (2009) as a “wide range of online, word-of-mouth forums, including blogs, company-sponsored discussion boards and chat rooms, consumer-to-consumer email, consumer product or service ratings websites and forums, Internet discussion boards and forums, moblogs (sites containing digital audio, images, movies, or photographs), and social networking websites, to name a few”.

On the other hand, Kaplan & Haenlein (2010) defined Social Media as “a group of internet-based applications that build on the ideological and technological foundations of web 2.0, and that allow the creation and exchange of user ”.

According to a survey done in January 2015, there are 2.078 billion active Social Media accounts in the world, of which 40 Million are from the Philippines. Statistics also showed that the top five active social networks used in the Philippines are the Facebook, Google+, Twitter, Pinterest and Instagram.

Selected Social Media tools and their uses and relevance are discussed below.

Facebook

Facebook is a social networking website that allows users to create and customize their own profiles with photos, videos, and information about themselves. Facebook provides an easy way for friends to keep in touch and for individuals to have a presence on the Web without needing to build a websites it allows (Tech Terms, 2008).

Facebook was initially created for Harvard students but in 2006, it allowed everyone to join. The News Feed feature that would broadcast changes in members' pages to all Facebook users identified in their network of friends was added and it turned Facebook into a personalized social news service that by 2012, Facebook surpassed one billion users (PC Mag, 2015).

As of the second quarter of 2015, Facebook has reported to have 1.49 billion monthly active users.

Google+

Google+ is Google's service that delivers functionality and many features similar to those of Facebook including "Posts" for posting status updates, "Circles" for sharing information with different groups of people (like Facebook Groups), "Sparks" for offering videos and articles users might like, and "Hangouts" and "Huddles" for video chatting with a friend or group of friends c

Twitter

Twitter is a free social messaging tool that lets people stay connected through brief text message updates up to 140 characters in length, based on you answering the question "What are you doing?" (Webopedia, 2015).

Twitter has become the next hot trend in social networking as it allows friends, family, and complete strangers to stay connected through quick updates that only take a couple of seconds to write (Tech Terms, 2009). As of the second quarter of 2015, Twitter has reported to have an average of 340 million monthly active users.

Pinterest

Pinterest is a social networking website that allows you to organize and share ideas with others by creating your own "boards" to organize your content (Tech Terms, 2012)

It also lets people share images and videos from their own personal media collection or from websites they visit. Pinterest uses a system of "boards" which is a collection of photos on any topic you choose to pin about (Webopedia, 2015).

Instagram

Instagram is an online photo sharing service that allows you to apply different types of photo filters to your pictures with a single click, then share them with others. The two primary ways to use Instagram are the Instagram website which allows you to upload images, manage your photos, apply filters, and share them with your friends and the Instagram app which allows you to take pictures with your iPhone or Android device and immediately apply the filter of your choice (Tech Terms, 2014).

YouTube

YouTube is a popular free video-sharing website that lets registered users upload and share video clips online at the YouTube.com web site. Launched in 2005 by former PayPal employees, the video-sharing site was acquired by Google Inc. in October 2006 for US \$1.65 billion in Google stock (Webopedia, 2015).

YouTube is a video sharing service that allows users to watch videos posted by other users and upload videos of their own (Tech Terms, 2009).

Uses and Advantages of Social Media

Social Media have drastically changed the way tools delivered education in today's learners. The tools we use inevitably change how we think, how we learn, what we may think and what we may learn (Mason & Rennie, 2008).

Cavazza (2015), in his attempt to illustrate the variety of existing platforms in a form of diagram came up with the Social Media Landscape. According to him, Social Media is a vast ecosystem of online services structured around four main usages: publishing, sharing, discussing and networking. On the other hand, Lepi (2012) suggested several ways on how Social Media can be used and they were summarized in Table 1.

Table 1: Uses of Social Media

Social Media	Uses of Social Media
Facebook	<ul style="list-style-type: none"> • Improve communication by allowing students to easily message teachers and other students with questions • Facebook page can be used in class to schedule events, post notes and remind students of assignment due dates. • Intertwine class projects with Facebook by sharing book reviews, polling class and promoting student work. • Facebook apps and groups like Flashcards and WeRead can be used to make learning and studying easier and more enjoyable.
YouTube	<ul style="list-style-type: none"> • Teach students how to produce and edit video by having them film and upload videos to a class YouTube channel. • Search for on-topic videos that can be used in a classroom to bring lessons in life, making them more memorable. • Record lessons and post them on YouTube so students can view them whenever they want. • Take videos to the next level by adding quizzes, annotations and more.
Twitter	<ul style="list-style-type: none"> • Post supplementary materials like links to articles and videos so students can continue learning even when class is over. • Create a feed for classroom so information about upcoming assignments, events and class news can be tweeted. • Connect with other classrooms, teachers and parents to increase communication and build community • Track hash tags, memes and current events by setting up specific feeds the entire class can monitor.
Pinterest	<ul style="list-style-type: none"> • Use community boards for group projects and brainstorming so multiple users can save their resource in one place • Allow students to use Pinterest for presentations and projects. Set up boards to promote students' final assignments. • Search, find, pin and organize images, projects , videos, stories and more for future lesson plans and projects.
Wordpress	<ul style="list-style-type: none"> • Create a blog so students can stay up-to-date on upcoming projects, due dates, events and other reminders. • Post daily or weekly assignments on the blog so students who were absent can know what they missed. • Post discussion topics on the blog; give students a few days on the topic and comment. • Publish student's work or have students set up their own blogs as online portfolios. • Encourage students to post on a class blog weekly to develop their own voice and work on their writing.

Source: Lepi, K. 2012. 25 Ways teachers can integrate Social Media into education

Reason for Using Social Media

One of the most important factors on the adoption of Social Media is the motivation why people use this technology. In a survey made by Globalwebindex on April 2015, the following were reported to be the top ten reasons for using the Social Media:

1. To stay in touch with what my friends are doing
2. To stay-up-to-date with news and current events
3. To fill up spare time
4. To find funny or entertaining content (i.e. articles, videos)
5. To share my opinion
6. To share photos or videos with others
7. Because a lot of my friends are on it
8. General networking with other people
9. To meet new people
10. To share details of what I'm doing in my daily life.

Technology Acceptance Model

User acceptance is often the pivotal factor determining the success or failure of an information system project (Davis, 1993). The Technology Acceptance Model (TAM) is an information systems theory that “provides an informative representation of the mechanisms by which design choices influences user acceptance, and should therefore be helpful in applied contexts for forecasting and evaluating user acceptance of information technology (Davis, 1993)”. Furthermore, Davis (1993) specifies the causal relationships between systems design features, perceived usefulness, perceived ease of use, attitude toward using and actual usage behavior.

Methodology

Proposed Conceptual Framework

To determine the communication factors related on the use of the Social Media as a learning tool among the distance learners, the Technology Acceptance Model (TAM) was used as the basis for the framework.

External variables such as socio-demographic characteristics, information seeking and sharing measures, source accessibility and frequency were observed and recorded. Moreover, the perceived attributes of the Social Media and attitude towards the use of Social Media as a learning tool were measured to determine if they have a bearing on the students' acceptance or rejection of the technology.

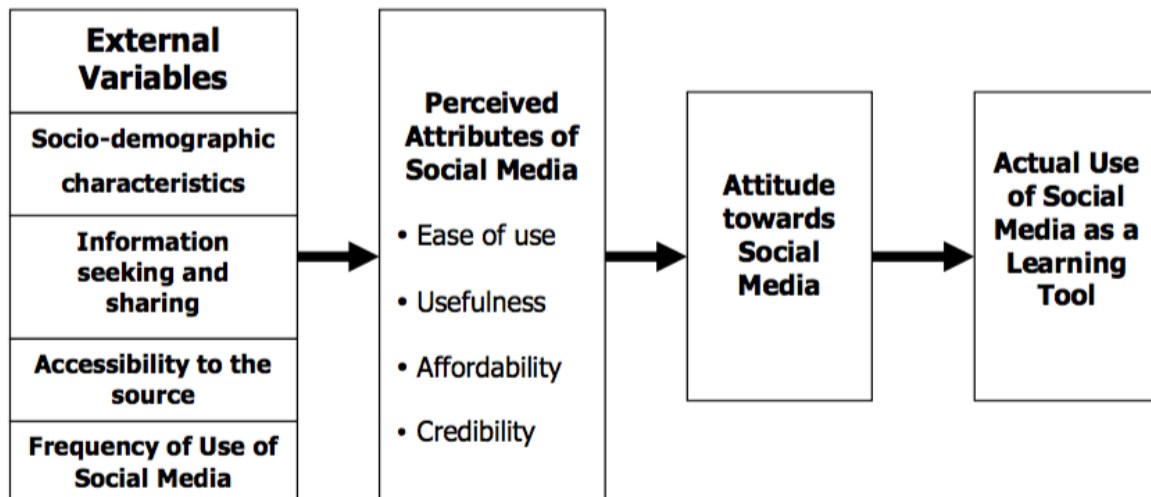


Figure 1: Conceptual framework on the acceptance of Social Media as a learning tool by UPOU learners.

Data Analysis

To determine the communication factors related on the use of Social Media as a learning tool among the distance learners, the Technology Acceptance Model (TAM) was used as the basis for the conceptual framework. Students' socio-demographic characteristics, information seeking and sharing preferences, source accessibility and frequency of use related to the use of Social Media were assessed while the students' perceived attributes, attitude, beliefs, values and motivations on the use Social Media as a learning tool were observed and measured. Data was collected using the survey research design technique.

Descriptive analysis was used to describe the relationship of the variables using frequencies, percentages and means. The data collected were analyzed using Statistical Packages for Social Science (SPSS).

Discussion

Socio-demographic Characteristics

The socio-demographic profile of the respondents is presented in Table 9. Most (84 percent) of the respondents are 21 years and older. Forty-nine percent of the respondents are male while 51 percent are female. Almost half (42 percent) of the respondents are taking post-baccalaureate programs while more than half (58 percent) are taking the undergraduate program. Majority (79 percent) of the respondents are in the Philippines while 21 percent are abroad. More than half (51 percent) of the respondents have been studying at UPOU for one year to four years already.

Information Seeking and Sharing Measures

Data from Table 9 showed that almost half (42 percent) of the respondents were very active in seeking and sharing school-related information. Moreover, results showed that respondents communicated and shared information with mostly with their classmates (72 percent) and friends (61 percent).

On the other hand, data from Table 2 revealed that most (73 percent) of the respondents used Social Media while more than half (56 percent) used email to communicate and share school-related information with other people. As distance learners, the respondents used online portal for their courses. Thus the use of online media to communicate and share information is expected since the respondents are online learners. However, only few (11 percent) of the respondents used the course portal to communicate and share school-related information.

Finding also showed that next to Social Media, most (74 percent) of the respondents still preferred the face-to-face communication to discuss and share school-related information with other people. The reason for this is perhaps more than half (57 percent) of the respondents discussed and shared school-related matters with their family (Table 2).

Table 2: Students' Information Seeking and Sharing Behaviors

	Frequency (N = 100)*
Discuss and share information with	
Classmates	72
Friends	61
Family	57
Faculty-in-charge (FICs)	5
Co-workers	3
Communication channel	
Social Media	73
Face to face	64
Email	56
Telephone	16
Portal	11

* Multiple responses

Source Accessibility and Frequency of Use of Social Media

When it comes to the respondent's accessibility to the Internet, which he/she can use to access the Social Media, results of the study showed that most (79 percent) of the respondents have medium to high accessibility (Table 9). Moreover, all the respondents accessed the Internet and visited the Social Media.

Most (99 percent) of the respondents access Internet at home while 58 percent access Internet from the office (Table 3). This implies that access to Internet is readily available to all of the respondents.

The students' frequency of use on the Internet was also asked to the respondents. Results of the study showed that majority (81 percent) of the respondents have medium to high frequency Social Media usage while only 19 percent had low frequency usage (Table 3). This implies that the accessibility of the respondents to the Internet might contribute to the frequency of Social Media usage.

Moreover, results of the study also showed that most of the respondents used laptop or desktop (98 percent) and mobile phones (85 percent) to access Social Media (Table 3). Most of the respondents owned laptop or desktop (96 percent) and mobile phones (83 percent).

Table 3: Source Accessibility and Frequency of Use of Social Media

Variables	Frequency (N = 100)*
Students' accessibility to the Internet	
Home	99
Office	58
Internet Shop	22
Learning Centers	6
Device used to access Social Media	
Laptop/Desktop	98
Mobile Phones	85
Tablets	50
Others	2
Media Ownership	
Laptop/Desktop	96
Mobile phone	83
Tablet	49

* Multiple responses

Perceptions Towards Using Social Media

Using open-ended questions, respondents were asked to enumerate what they thought were the positive and negative qualities of Social Media. Three fourths (78 percent) of the respondents who were asked the question “What do you think are the good qualities of Social Media?” answered that “Social Media is an easy, fast, effective and convenient way to communicate with other people”. This implies that respondents are longing to communicate with other people from different places and Social Media made it possible for them to do so. Some other perceived positive qualities mentioned were “most people are into it so it is easier and faster to reach” and “Social Media has a rich source of information and news” (Table 4).

On the other hand, respondents were also asked the question “What do you think are the negative qualities of Social Media?” Among the answers were “credibility of the information in the Social Media is poor”, “Social Media is addictive and distraption to studies and work”, “privacy and security risks” (Table 4). This shows that even though the respondents knew and were aware of the negative effects of SNSs to them, still, majority of them (77 percent) said that they were satisfied with the attributes of Social Media (Table 9).

Reasons for Using Internet and Social Media

Open-ended questions were asked to the students to find their reasons for using the Internet and Social Media. Based on the data indicated in Table 4, the five primary reasons for using the Internet were to communicate with family and friends using Social Media, (69 percent), to access course portal (63 percent), for work-related matters (47%), for fun and entertainment (31 percent), and for research purposes (26 percent).

Meanwhile, the students identified several reasons why they used Social Media. Some of these reasons include “to stay in touch with family and friends” (68 percent), “for socialization and networking” (35 percent), “because other people are into it” (30 percent), “because it is accessible, affordable, convenient and fast way of communication” (28 percent), and “for school-related matters” (27 percent) (Table 4).

Table 4: Students’ Perceived Attributes on the Use of Social Media

	Frequency (N = 100)*
Reasons for Using Internet	
Communicating with family and friends using Social Media	69
To access course portal	63
Work-Related	47
For fun and entertainment	31
Research	26
To keep updated with news and events	14
Reasons for Using Social Media	
Stay in touch with family and friends	68
Socialization, networking, entertainment, games, news	35
Other people are into it	30
Accessibility, affordability, convenience, fast feedback	28
School-related matters	27
Work-related	11
To fill-up spare time	2
Perceived good qualities of Social Media	
Easy, fast, effective and convenient way to communicate with other people	78
Most people are into it so it is easier and faster to reach	34
Rich source of information and news	32
Perceived bad qualities of Social Media	
Credibility of the information is poor	49
Addictive, distraction to studies and work	36
Privacy and security risks	23

**Multiple responses*

The students were also asked to rate the tools of Social Media in terms of user-friendliness, effectiveness, affordability and credibility of the information found in the websites.

The data in Table 5 revealed that majority of the respondents were satisfied with Social Media in terms of user-friendliness (97 percent), effectiveness (97 percent), affordability (44 percent), and credibility (56 percent).

On the other hand, most of the respondents were also satisfied with Social Media as a learning tool in terms of user-friendliness (84 percent), effectiveness (78 percent), affordability (56 percent), and credibility (66 percent).

Table 5: Students' Perception on the Use of Social Media

	Strongly Disagree	2	3	4	Strongly Agree	Mean
	% of Total					
Perception towards Social Media Tools						
User-friendliness and Ease of Use	0%	0%	3%	52%	45%	4.42
Effectiveness and Usability	0%	1%	2%	57%	40%	4.366
Affordability	10%	23%	23%	33%	11%	3.12
Credibility	4%	17%	23%	53%	3%	3.34
Perception towards Social Media as a Learning Tool						
User-friendliness and Ease of Use	1%	5%	10%	61%	23%	4
Effectiveness and Usability	1%	9%	12%	63%	15%	3.82
Affordability	7%	15%	22%	47%	9%	3.36
Credibility	1%	10%	23%	58%	8%	3.62

Attitude Towards Using Social Media

Based on the results of the study, 71 percent of the respondents believed that Social Media has good source of information while 83 percent believed that being a member of Social Media is an advantage (Table 6).

The respondents were also asked if they think that Social Media had positive effects on their studies and personal lives. Sixty-four percent agreed that Social Media tools have positive effects on their studies while majority (77 percent) agreed that Social Media tools have positive effect on their social lives (Table 6).

Meanwhile, most (60 percent) of the respondents said that they were satisfied in using Social Media tools. Although there were 17 percent of the respondents who encountered difficulty in using Social Media, majority of them were still going to recommend the use of Social Media as learning tools to their friends, classmates or family (81 percent) (Table 7).

This implies that overall, respondents had positive attitudes toward Social Media.

Table 6: Students' Attitude Towards the Use of Social Media

	Strongly Disagree	2	3	4	Strongly Agree	Mean
	% of Total					
Social Media are good source of information	2%	9%	18%	58%	13%	3.71
Being a member of Social Media is an advantage	0%	2%	15%	53%	30%	4.11
Social Media Tools can be used as learning tools	0%	2%	5%	61%	30%	4.17
Social Media tools have positive effects on studies	1%	8%	27%	46%	18%	3.72
Social Media tools have positive effects on personal life	0%	8%	15%	55%	22%	3.91
Social Media tools is an effective tool for learning	1%	5%	12%	60%	22%	3.97
Social Media as learning tools is satisfying	2%	8%	30%	45%	15%	3.63

Students' Acceptance of Social Media as a Learning Tool

Students' use and acceptance of Social Media as a learning tool involved different factors. Scores were summed up to get the data on students' acceptance on Social Media as a learning tool. Results of the study showed that all of the respondents were members of Social Media. Table 7 also indicated that 96 percent of the respondents used Social Media as a learning tool even though 17 percent of the respondents reported to experienced difficulty in Social Media. Moreover, 73 percent of the respondents have medium to high frequency use of Social Media as a learning tool. In addition, majority (87 percent) of the respondents will recommend the use of Social Media as a learning tool to his or her family and friends.

The students were asked to choose how they use Social Media as a learning tool based on Cavazza's (2015) Social Media Landscape. Fig. 2 indicates that respondents used Social Media as a learning tool through discussion (77 percent), sharing (74 percent), networking (38 percent), and publishing (37 percent).

On the other hand, Fig. 3 showed the student's membership in the Social Media and the Social Media they used as a learning tool. Based on the results of the study, the top five Social Media membership of the students are Facebook, YouTube, Google+, Twitter and Instagram. On the other hand, the top three Social Media that students used as learning tools are Facebook, YouTube and Google+.

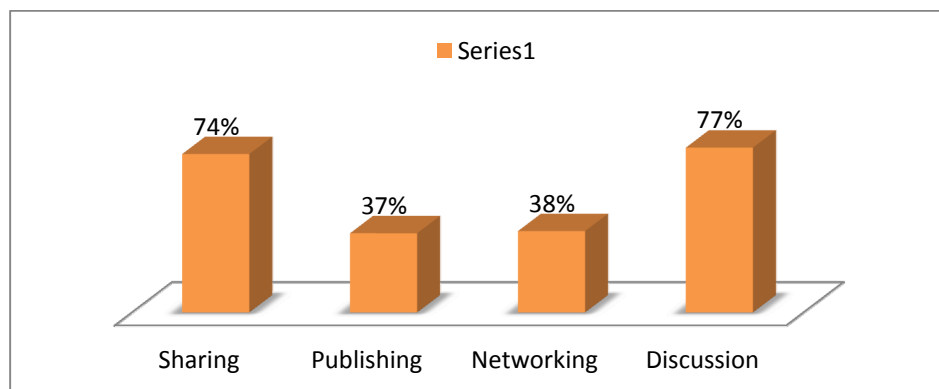


Figure 2: Use of Social Media as a Learning Tool

Table 7: Students' Acceptance of Social Media as a Learning Tool

	Frequency (N=100)	Percentage (%)
Social Media Membership		
Yes	100	100
No	0	0
Use of Social Media as a Learning tool		
Yes	96	96
No	4	4
Frequency of Use of Social Media as Learning Tool		
Low	27	27
Medium	26	26
High	47	47
Encountered difficulty using Social Media?		
Yes	17	17
No	83	83

Will Recommend the use of Social Media Tools?		
Yes	90	90
No	7	7
Will Recommend the use of Social Media Tools as a Learning Tool?		
Yes	87	87
No	13	13

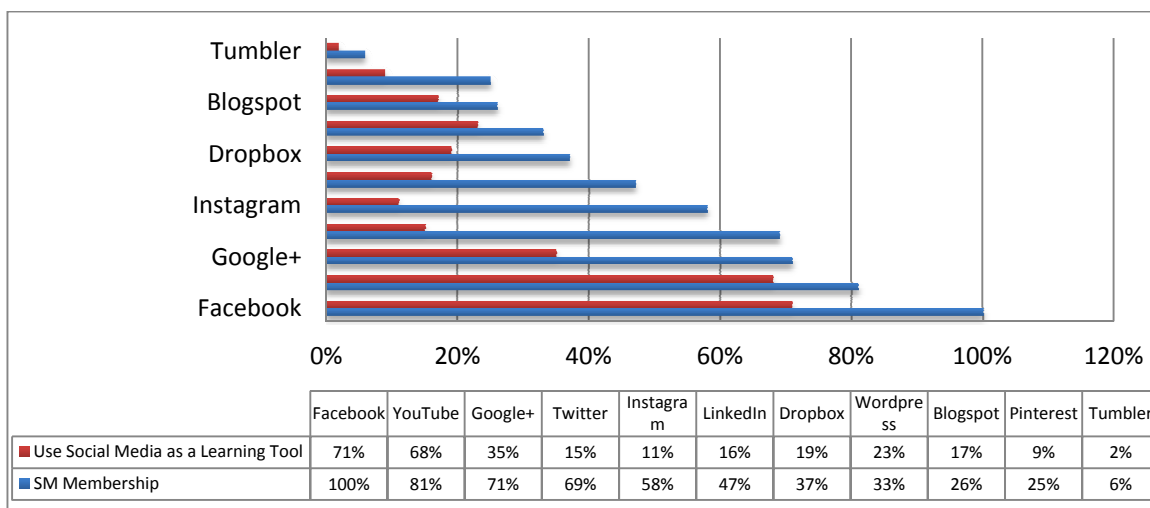


Figure 3: Students' Social Media membership and Social Media used as a Learning Tool

Relationship between Variables and Acceptance of Social Media as a Learning Tool

This research hypothesized that the students' socio-demographic characteristics, information seeking and sharing measures, level of accessibility to the source and frequency of use of Social Media, perceived attributes of Social Media and attitude towards the use of Social Media as a learning tool were not related to the acceptance of Social Media as a learning tool.

Results of the study showed as indicated by chi-square tests that there are no significant relationships between the variables and the acceptance of Social Media as a learning tool among the respondents (Table 10).

Relationship between Socio-demographics Characteristics and Acceptance of Social Media as a Learning Tool

It can be noted that students aged 21 and above (83 percent) had a higher tendency to accept Social Media as a learning tool compared to the students aged 17 and below (9 percent) (Table 8). However, the students aged 21 and above also have the highest low acceptance rate (81%). It can be concluded in this study that regardless of age, student accepts Social Media as a learning tool. This can also be explained by the fact that there was a less variation on the ages of the respondents. Moreover, data in Table 8 indicated that female (53 percent) had higher acceptability of Social Media as a learning tool than male (47 percent).

On the other hand, data also showed that students studying in the university for two years and below were the highest acceptors of Social Media as a learning tool. It can also be noted in this study that regardless of number of years studying in the university, student accepts Social Media as a learning tool.

Data in Table 8 also showed that the student accepts Social Media as a learning tool regardless of their degree program and location.

Relationship between the Variables and the Acceptance of Social Media as a Learning Tool

Data from Table 9 showed that 43 percent of students who were very active in information seeking and sharing had high acceptability rating. Meanwhile, some (26 percent) of the students who had less active information seeking and sharing practices had high acceptability rating. It can be further concluded that the students' use of Social Media as a learning tool is not related to their information seeking and sharing practices.

On the other hand, results showed that students who have highest accessibility to the Internet are also the highest acceptors of Social Media as a learning tool.

The data on Table 8 shows that many (60percent) students with high frequency of use had high acceptance rating as well. This implies that the more the students use the Internet, the more likely the students will use the SNSs. This can be further traced back from the data in Table 4 that shows communicating with family and friends using Social Media was the top reason why students used the Internet. It can be concluded that the more frequent the student is exposed to Internet, the more likely that the student will use Social Media.

Majority (87 percent) of the students who are satisfied with the attributes of Social Media as a learning tool highly accepted Social Media as a learning tool. It can also be noted that the perceived attributes of Social Media is not a determining factor to accept Social Media as a learning tool.

Data in Table 9 shows that 4 percent of the students who strongly agree on the use of Social Media as a learning tools have high acceptance rate. Result implies that the students' attitude towards Social Media does not affect acceptance of SNSs.

Table 8: Relationship Between the Students' Socio-demographic Characteristics and Acceptance of Social Media as a Learning Tool

Characteristic		Acceptance of Social Media as a Learning Tool							
		HIGH		MEDIUM		LOW		TOTAL	
		N = 47	%	N = 26	%	N = 27	%	N = 100	%
Age									
	17 and below	4	9%	1	4%	1	4%	6	6%
	18-20	4	9%	2	8%	4	15%	10	10%
	21 and above	39	83%	23	88%	22	81%	86	86%
Gender									
	Male	22	47%	0	1%	15	56%	38	38%
	Female	25	53%	0	1%	12	44%	38	38%
No. of years studying at UPOU									
	Less than 1 year	21	45%	11	42%	10	37%	42	42%
	1-2	11	23%	7	27%	6	22%	24	24%
	3-4	8	17%	5	19%	8	30%	21	21%
	5-8	7	15%	3	12%	3	11%	13	13%
Degree Program									
	Undergraduate	26	55%	15	58%	17	63%	58	58%
	Post-baccalaureate	21	45%	11	42%	10	37%	42	42%
Location									
	Philippines	35	74%	22	85%	22	81%	79	79%
	Abroad	12	26%	4	15%	5	19%	21	21%

Table 9: Relationship between the Variables and the Acceptance of Social Media as a Learning Tool

VARIABLES		Acceptance of Social Media as a Learning Tool							
		HIGH		MEDIUM		LOW		TOTAL	
		N = 47	%	N = 26	%	N = 27	%	N = 100	%
Information Seeking and Sharing									
	Less Active	12	26%	4	15%	5	19%	21	21%
	Active	15	32%	13	50%	9	33%	37	37%
	Very Active	20	43%	9	35%	13	48%	42	42%
Accessibility to Internet									
	Low	9	19%	7	27%	5	19%	21	21%
	Medium	16	34%	9	35%	12	44%	37	37%
	High	22	47%	10	38%	10	37%	42	42%
Frequency of Use to access Social Media Tools									
	Low	8	17%	3	12%	8	30%	19	19%
	Medium	11	23%	11	42%	6	22%	28	28%
	High	28	60%	12	46%	13	48%	53	53%
Perception towards Social Media as Learning Tools									
	Very Unsatisfied 1	0	0%	0	0%	0	0%	0	0%
	2	0	0%	0	0%	2	7%	2	2%
	3	8	17%	9	35%	7	26%	24	24%
	4	39	83%	17	65%	18	67%	74	74%
	Very Satisfied 5	0	0%	0	0%	0	0%	0	0%
Attitude towards Social Media as Learning Tools									
	Strongly Disagree 1	0	0%	0	0%	0	0%	0	0%
	2	1	2%	0	0%	0	0%	1	1%
	3	9	19%	7	27%	5	19%	21	21%
	4	33	70%	15	58%	18	67%	66	66%
	Strongly Agree 5	4	9%	4	15%	4	15%	12	12%

Table 10: Summary of the Results of the Chi-square Tests of Relationships between Variables and Acceptance of Social Media as a Learning Tool

Variables	Chi-Square/ Fisher's Exact Test Value	DF
Age	1.89	4
Gender	0.639	2
No. of Years studying at UPOU	2.785	2
Degree Program	0.413	2
Location	1.176	2
Information Seeking and Sharing	3.12	4
Accessibility to Internet	1.64	4
Frequency of use to access Social Media Tools	5.775	4
Perception towards Social Media as Learning Tools	31.579	4
Attitude towards Social Media as Learning Tools	3.021	6

Conclusion

Keeping up with the newest trends in technology is a huge challenge but it also brings an enormous opportunity for educators to use it as tools for learning. Internet and Social Media has become a tool for communication among students and teachers and the use of Social Media as a learning tool is becoming the new buzz in the academe.

This study explored the factors related to the adoption of Social Media as a learning tool among distance learners at UPOU. The findings of the study revealed that all of the respondents were members of Social Media and majority used Social Media as a learning tool. Results also showed that majority of the respondents have Social Media accounts in Facebook, YouTube, Google+, Twitter and Instagram. On the other hand, the top three Social Media that students used as learning tools are Facebook, YouTube and Google+.

Moreover, 73 percent of the respondents had medium to high frequency use of Social Media as a learning tool. In addition, majority (87 percent) of the respondents will recommend the use of Social Media as a learning tool to his or her family and friends.

Findings of the study also revealed that respondents used Social Media as a learning tool through discussion (77 percent), sharing (74 percent), networking (38 percent), and publishing (37 percent).

Results of the study showed that many of the respondents were very active in seeking and sharing school-related information. Data showed that majority (99 percent) of the respondents have access to Internet at home and most of them used laptop or desktop to access Social Media.

Findings showed that most of the respondents were satisfied with Social Media as a learning tool in terms of user-friendliness and effectiveness. Results also showed that majority of the respondents were satisfied with the attributes of Social Media as a learning tool.

Most of the respondents who were asked the question "What do you think are the good qualities of Social Media?" answered that "Social Media is an easy, fast, effective and convenient way to communicate with other people" which implies that respondents are longing to communicate with other people from different places and Social Media made it possible for them to do so. Moreover, many of the respondents indicated that one of the perceived good qualities of Social Media is that

“most people are into it so it is easier and faster to reach them”. It implies that the choices of other people affect the acceptance of the students to the technology.

Moreover, findings showed that most of the respondents used Social Media in communicating and sharing ideas with other people.

Results of the study revealed that communicating with family and friends using Social Media and to access the course portal were the students’ top 2 reasons in using the Internet while students’ top three motivations for using Social Media were: a) to stay in touch with family and friends, b) for socialization and entertainment, and c) because other people are into it.

Results of the study showed that there is no significant relationship between the variables and the acceptance of technology.

This study aimed to help teachers and administrators to create a more efficient and appropriate programs for the students. This would also help those who are in the policy-making sectors to formulate guidelines and policies towards a more responsive student body.

This study will also serve as baseline information and groundwork for future researchers on the emerging concept of Social Media as a learning tool. This study also aims to contribute to future researches and communication-related projects through any usefulness of the variables that may be found in this study.

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LEARNERS PERCEPTION ON ONLINE LEARNING IN OPEN AND DISTANCE EDUCATION MODE IN THE DIPLOMA IN EARLY CHILDHOOD AND PRIMARY EDUCATION, THE OPEN UNIVERSITY OF SRI LANKA

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Abstract

The widespread introduction of online technologies to support teaching and learning in distance education has significantly increased. The traditional higher education classroom has increasingly moved from a face-to-face environment to one that is integrated, blended or even replaced by online interaction. The Open University of Sri Lanka (OUSL) as one of the leading distance education institution is moving to support teaching and learning through online technologies. The purpose of this study was to investigate how Diploma in Early Childhood and Primary Education (DECPE) students perceive online learning if it is introduced to their program in future and what benefits they could receive as well as barriers they would face. The study employed a survey research design. A questionnaire and interview were utilized to gather data from randomly selected sample of 100 students from DECPE 2014/15 batch. The quantitative data was analyzed using SPSS and descriptive analysis was adopted qualitative data. The data indicated majority of sample view online learning as a method of learning through internet using a computer technology. Majority identified saving time and availability of learning at home as the major benefits of online learning. In addition they also realized receiving instant feedback and improvement of their knowledge of English as benefits of online learning. However majority had considered barriers of having lack of face to face contact with lecturer regarding further clarification, lack of computer and internet facilities, difficulties in bearing cost, lack of English knowledge and computer literacy as major barriers they would face. Further the sample of students suggested if they are given proper awareness, knowledge and skills to engage in online learning as well as English knowledge by the University, blend on and off face to face contact session parallel with online learning and introduce reasonable loan scheme to bear the cost of computer and internet facilities by the university, they would be able overcome the barriers they identified in online learning. Findings concluded that the students have clear perception on online learning, its benefits and barriers. Thus the study recommends introducing a proper mechanism to facilitate students' enrollment in online learning effectively in future.

Introduction

In the last sixty years, information and communication technology (ICT) has progressed greatly, and has influenced the everyday life of people. As a result of that people have become technologically dependent. In that sense many flexible learning education providers have adopted information and communication technologies for their programmes. So this adoption has led to new modes of education called E- learning, online learning, M- learning and Network learning (Georgiev, Georgieva, & Smrikarov, 2006).

National Report of online learning (2006) stated that "Online learning may include any organized instruction using Internet technologies in conjunction with face-to-face instruction or in place of it. (Barbour, et, al. 2004) defines online learning as: "Education in which instruction and content are delivered primarily via the Internet. Online learning is a form of distance learning".

As mentioned by Matthews (1999) implementation of electronic tools in relationship with flexible learning activities creates a lot of opportunities and is convenient for students. Students are able to follow the course from without considering any geographical boundaries and flexible/ distance learning becomes real time learning where students can obtain the course materials and the instructions of the teacher straight away without any delay. Students can actively get communication facilities such as chat room; discussion board and email etc and make them feel like they are learning with a group of people.

As a result of this technological evolution, wide introduction of online technologies to support teaching and learning has significantly altered the practice of teaching in many tertiary institutions (Abrioux, 2004). The traditional higher education classroom has increasingly moved from a face-to-face environment to one that is integrated, blended or even replaced by online interaction (Lockyer & Bennett, 2006). Further it provides many opportunities for students and in particular can enable them to become self-directed, independent learners and eventually lifelong learners.

As online enrollments continue to rise, research in this area will remain an important area of study (Alexander, Truell and Zhao, 2012). As stated by Dobbs, Waid, & Carmen (2009) research identifying students' perceptions of online learning is limited. Although many post-secondary instructors are involved in designing online courses, as indicated by Beard, Harper, and Riley (2004) many of these offerings are designed without needed student contributions. In addition, research involving student perceptions of online courses has typically concentrated on students who have had experience with online courses (Dobbs, Waid, & Carmen, 2009). According to the study of Rodriguez & Ooms (2008) on Students' Perceptions of Online-learning revealed that students with no online-related learning experience, comfort was strongly related to motivation to learn technology skills, whereas neither was related to perceived quality and satisfaction with online courses is an important factor in explaining perceived quality of such courses. Therefore, this study was conducted to identify the perceptions of students in Diploma in Early Childhood and Primary Education Programme (DECPE) (who had no experience with online courses) in relation to their perception of taking online courses in future.

Background to the Study

The Open University of Sri Lanka (OUSL) has become a pioneer tertiary institute which provide open and distance learning opportunities to Sri Lankan people to success their lifelong learning objectives. At present OUSL offers several online courses as a supplementary or blended with the aim of expanding the online learning opportunities for students in future. The DECPE Programme is one of the leading programmes in the Faculty of Education which provide professional development opportunities for preschool and primary school teachers. So far only one course of the DECPE Programme (ESD1230 Child Development I) has been designed for online learning.

To promote online learning among students while maintaining the quality of online learning programmes, it is important on investigate about learner's perception on this learning pattern. Because learners are one of the main sector who gain the benefit of any learning opportunities. Further studying about learner's perception will lead to identify ways and means to improve the quality of online learning for current online programmes as well as future implementation. (Bernard et, al. 2004). The University takes continuous measures to promote online learning. Therefore it is high time to conduct an investigation on learners' perception on online learning in DECPE Programme.

Objectives of the Study

1. To identify student's perception on online learning.
2. To find out advantages and disadvantages they would receive when learning through online
3. To identify student's suggestions to overcome perceived disadvantages when learning through online

Research Questions

The following research questions were formulated to achieve the above objectives.

1. How would students perceive online learning?
2. What are the advantages and disadvantages students would perceive if they would learn through online?
3. What suggestions students would perceive to overcome perceived disadvantages when learning through online?

Literature Review

Students' Perception on Online Learning

Student perception is an influential factor in the successful adoption of educational technology (Lui A. K., Choy Sheung-On, Cheung Y. H.Y. & LI S. C., 2006). O'Malley and McCraw (1999a) suggested perceived effectiveness of a technology such as online learning is contributed by three factors: the prior educational condition, characteristics of students, and perceived characteristics of the technology.

According to the Study conducted by Dobbs, Waid, & Carmen (2009) revealed that students perceived that traditional face-to-face courses were easier than online courses. In addition, students who had never taken any online courses had totally different perceptions about online education compared to students who had taken online courses. Students who had never experienced online education perceived that faculty have low expectations, whereas students who experienced online courses believed that faculty has high expectations.

With reference to Craig, Goold, Coldwell, and Mustard (2008) on Perceptions of Roles and Responsibilities in Online Learning stated that students also have a positive attitude towards the use of ICT to support teaching and learning. Nevertheless it mentioned that students are generally unprepared for new learning experiences. Further, Students consider the use of ICT as a supplement to traditional teaching only and are concerned about the loss of quality of their learning experience as well as the apparent transfer of burdens and costs to them.

Mortagy and Boghikianon (2010) mentioned that support future success of students and their satisfaction with online courses as well as perceptions of quality, educators would do well to help prepare students for the technological demands of the course either through prerequisites or direct training. Motivation to engage and learn technological tools could easily be included as a prerequisite.

According to the study of Kavaliauskienė & Valūnas (2012) revealed that since e-learning has become required in higher education, the blended learning is highly recommended as it is acceptable to many students. Blended learning (also called hybrid learning) allows students to receive significant portions of instruction through both face-to-face and online means. Researchers see blended learning in the middle of the spectrum between fully face-to-face and fully online instruction (Graham, Allen, and Ure 2005; U.S. Department of Education 2007; Watson et al. 2010).

Advantages and Disadvantages of Online Learning

The study conducted by Alexander, Truell, Zhao (2012) on online learning identified, convenience factors of not having to pay attention to dress, worry about how to get to class (car issues), or dealing with bad weather was rated as the main advantage of taking courses online. In addition flexibility was also rated highly, as the expectation of being able to work on the course at your own time and pace was seen as quite desirable. Another advantage perceived by a large number of students was not having to sit through lectures and being able to view/review lectures as needed. Major advantage of online courses did not have to deal with other students disrupting class and not having to deal with other students asking questions.

The main disadvantages of taking online courses were perceived as the likelihood of procrastinating, not understanding content when not face-to-face with the instructor and more self-discipline for reading and learning. Misunderstanding assignment directions, trying to contact the instructor for help, and technology issues were all reported as potentially frustrating and stressful disadvantages of online learning. In addition, many students indicated that using the computer for other non-related course activities, such as Face book, while working on the course would be a drawback (Alexander, Truell, Zhao, 2012).

Smart & Cappel (2006) also highlighted some challenges perceived by students such as content-related issue raised concerned the inclusion of simulations in the learning units, the online units did not contain enough “new” information or were not interesting.

A study done by Burton & Goldsmith (2002) on students’ experiences in online course, have stated that students recognized the most significant personal challenge to online courses was not the challenge of course content, but the need for discipline in managing the work equipments of their online courses while balancing the demands of carriers and personal commitments.

Research Methodology

As the study focus on identifying the learner’s perception on online learning in open distance a survey research design was adopted.

Population

The population of this study was around 936 students, registered for the Diploma in Early Childhood and Primary Education Programme in four regional centers ; Colombo, Kandy, Matara and Anuradhapura in the Open University of Sri Lanka in the academic year of 2014/2015.

Sample

The sample of this study composed of 70 Sinhala medium students and 30 English medium students from four regional centers who have registered for the DECPE level3. The sample size of each regional center was based on stratified random sampling method.

Data Collection Instruments

A questioner was used as the major data collection instrument. Twenty questions were included in to the questioner according to the objectives. Questioner was distributed to students to gather primary data. Further semi structured interview schedule was employed with 20% of the sample to gather data in-depth.

Data Analysis

Qualitative data of the study was analyzed by using SPSS soft ware and interpreted through charts and tables. Qualitative data of the study was descriptively discussed.

Discussion

According to the basic characteristics of the sample, majority were from age 20-30 years. 78% of the sample was not employed as teachers in primary or preschools. Nearly 71% of the respondents were aware of online learning previously. In addition nearly half of the respondents were aware of the opportunities available for online learning at The Open University of Sri Lanka. It was revealed that 51% respondents were aware of the opportunities directly from the OUSL while 16% were aware through friends. It was further identified at the interview that majority had an idea on online learning by participating in programmes such as inaugurations, day schools and through university website. According to the data gathered by four regional centre there were no significant differences of given responses. Thus, the data were analyzed irrespective of centre wise and medium.

Student's Perception on Online Learning

In this study, based on the revealed data from questionnaire and interviews, majority viewed online learning as learning through internet without participating face to face contact sessions. However 16% of the sample didn't respond for this question. Following statements of respondents further revealed their perception on online learning.

- “Without participating day schools learn through websites and discussing details lively”
- “It is an opportunity to develop our knowledge connecting with internet (Modern technology)”
- “It is a way to learn through internet and computers without going to the classroom physically, assignments can be submitted through online too”
- “We can participate for the lectures from anywhere”
- “Can learn through internet while staying at home”
- “It is a one way of through internet, but it is unsuccessful system”

According to The National American Council for Online Learning (NACOL), online learning is defined as Education in which instruction and content are delivered primarily via the Internet. National Report of online learning (2006) also states online learning may include any organized instruction using Internet technologies in conjunction with face-to-face instruction or in place of it. Thus, it could be revealed that in this study majority clearly perceived that in online learning they learn through internet, which indicates that majority have strong perception on online learning.

However 90% of the respondents weren't involve in any online programmes offered by the OUSL or any other institute which provide online learning facilities. Nevertheless 81% of the respondents were interested in following programmes through online in future.

Following Table: 1 indicates the responses given by the majority of respondents with regard to the benefits which can be obtained by learning through online.

Benefit	No. of Respondents (%)					
	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Not Responded
Can save time	-	09	22	23	43	3
Can study at home	-	15	10	46	24	5
Can receive instant feedback	-	15	25	37	21	2
Can improve English language	-	12	26	30	29	3

As indicated in the above Table 1, majority (70%) perceive the facility to studying at home as the most important benefit they can obtain through online learning. In addition they perceive, saving time, opportunities to improve English language and receiving instant feedback for their work as further benefits that they can obtain respectively through online learning. When the students were questioned on this regard at the interview they further mentioned that facility to studying at home is most important as they do not want to come to class and they can work at any time. As Alexander, Truell, Zhao (2012) identified, also in this study majority of the respondents considered convenience factors of not having to worry about how to get to class, flexibility and being able to work on the course at their own time and pace as the main benefits they can obtain through online learning.

Problems Students Might Face When Learning Through Online

The following Table 2 indicates the data identified through questionnaire and interview on the problems students would face when learning through online.

Problems identified by the respondents	No. of Respondents%
Lack of face to face contact with lecturer regarding further clarification	31
Difficulty to obtain computer and internet facility due to high cost	18
Lack of computer literacy to work online	08
Lack of English knowledge to work	14
Lack of knowledge to learn via online	14
Difficulty to manage time at home due to household work	03
Power cut , slow internet	05
Not Responded	07

As shown in the above Table 2, it could be revealed that the main concern of students will be the lack of face to face contact with lecturer regarding further clarification. In addition majority of sample also concern about the high cost they have to spend on computer and specially internet and lack of knowledge on online learning and English language to work online. Apart from those major concerns, they have few slight concerns on failure of power, slow internet and difficulty of managing time with household work at home. The following statements of the sample at the interview further illustrate their concerns on the same.

- “I don’t know much about this method”
- “It is not face to face learning, so can’t clear the doubts and difficulties”
- “Can’t take internet facility continuously”
- “Sometimes power cuts are there and difficulty to find internet facility everywhere”
- “Difficulty to get on the spot solutions for questions”

- “Need to improve knowledge on technology”
- “Difficulty to obtain extra-curricular knowledge and practical knowledge on day to day living”
- “When discuss with the lecturer in face to face session, we can establish what we learn easily. But it is limited in online learning”
- “It is very difficult to continue online learning with my job. Because difficult to concentrate.”

The above statements further illustrates that majority of them were concerned on difficulty of meeting lecturers due to lack of face to face contact sessions in online learning and difficulty of obtaining internet facility due to its cost. Some of the above problems, such as trying to contact the instructor for help, and technology issues have been reported as potentially frustrating and stressful disadvantages of online learning (Alexander, Truell, Zhao, 2012).

Suggestions Made by the Respondents to Overcome the Difficulties They Would Have When Learning via Online

The majority (60%) respondent stated that it would be better if they will be offered with blended online course rather than fully online courses. They further reported this might help them to contact lecturers during day schools and solve their problems. More over following statements demonstrate respondents’ suggestions to overcome the problems related to online learning.

- “Best way is blended learning: let students to learn online while participating face to face sessions”
- “Introduce low cost internet packages for students to convince their learning through online”
- “Provide more opportunities for students to develop English knowledge”
Eg: English course/ English supplementary course
- “Aware students more about how to learn through online effectively”
- “It is better if we are given loan facilities from university to buy computers and internet facilities”

According to the above data, the findings revealed following suggestions made by the majority of sample as remedies for their concerns if they are offered online learning in the DECPE Programme in future.

- Developing proper awareness, knowledge and skills to engage in online learning as well as English knowledge by taking different steps by the University
- Blending on and off face to face contact session parallel with online learning
- Introducing reasonable loan scheme to bear the cost of computer and internet facilities by the university.

Conclusion

The findings of the study conclude that majority of respondents have strong favorable perceptions on online learning and its advantages and disadvantages. Most of them were in favor of learning through online. As Craig, Goold, Coldwell, and Mustard (2008) mentioned, they have a positive attitude towards the use of ICT to support teaching and learning. However, they also have strong concerns on shifting from traditional face to face contact sessions to fully online sessions and cost of technology which they have to bear individually. Further, lack of knowledge of English language and technology also could be identified as de-motivating factors for online learning. This further concludes that students with no online-related learning experience, comfort were strongly related to motivation to

learn technology skills (Rodriguez & Ooms, 2008). Nevertheless, students also were aware of remedies for their identified issues in online learning. These conclusions suggest the Department of ECPE to take up measures to implement online learning by introducing a proper mechanism to minimize the difficulties identified by the students when learning via online to provide quality learning. Thus the study recommends initiating with blended online learning (Kavaliauskienė & Valūnas, 2012) as it allows students to receive significant portions of instruction through both face-to-face and online means.

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DESIGN AND DELIVERY OF MOOCs IN WAWASAN OPEN UNIVERSITY: A CRITICAL REFLECTION

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Abstract

*In the past few years a lot of interest have been shown by Universities, Government agencies, Higher Educational Institutions with support platform providers in offering MOOCs to students who were deprived of opportunities of getting education in a given areas of their interest at no cost or at low cost. For the institutions the basic goals of offerings MOOCs include extending reach and access, building and maintaining brand, innovation and research on teaching and learning (Hollands & Tirthali, 2014). Though the MOOCs are being offered since 4 years, the first being by Stanford in 2011, there has been a debate about the positive and negative implications of MOOCs offerings to the learners for facilitating them to learn and acquire knowledge and skills in areas of their interest. Positive implications include coverage of participants, scope for interaction among learners, availability of the course for free and scope for learners to learn on their own pace and place, which of course are the strengths of ODL. The negative implications from the perspective of institutions include non-seriousness of participants, low completion rate and quality of learning and from the perspective of participants the factors include quality of the course/inputs, lack of facilitation and facilities for credit transfers. Keeping in view the basic issues involved in offerings MOOCs, the Wawasan Open University developed two MOOCs – one on ‘OER based e-Learning’ sponsored by Commonwealth Educational Media Centre for Asia (CEMCA –COL, New Delhi, India) and another on ‘Action Research’ sponsored by Commonwealth of Learning (COL, Vancouver, Canada). The ‘OER based e-Learning’ course was of 5 modules whereas ‘Action Research’, of 4 modules, each of 2-3 weeks duration was offered on the platform – **Wawasan4PACE** on a Moodle version 2.5 open source software. Each of the courses had targeted different clientele groups and offered during Feb-May, 2015. This paper makes an attempt to critically reflect on the issues and challenges involved in designing and delivery of these two courses including the user friendliness of the platform, online facilitation and assessment, etc. and provide broad guidelines for offering MOOCs based on the experiences gained.*

Keywords: MOOC, Online learning, Action Research, OER, online learning, LMS

Introduction

Development and delivery of MOOCs have been becoming popular among institutions and individuals so as to reach large of population students who were deprived of opportunities of getting education at no cost or at low cost. For the institutions the basic goals of offerings MOOCs include extending reach and access, building and maintaining brand, innovation and research on teaching and learning (Hollands & Tirthali, 2014). Of late attempts are also made to offer MOOCs to facilitate students to have the credit transfers and acquire qualifications, in the process, the institutions will optimally utilise its resources and add additional revenue. Many Universities and institutions are continuously attempting to develop new programmes or adopting the existing programmes to offer as MOOCs. In this context it has become essential to understand from the institutional perspective the processes and challenges involved in offering MOOCs, as each institution is unique in many aspects such as vision, structure, resources etc.

Wawasan Open University Initiative

Wawasan Open University (WOU), Malaysia is the first private not-for-profit ODL institution, established in 2007 in Penang. As part of the new venture the University's Centre for Professional Development and Continuing Education (WOU-PACE) which is responsible for organising short courses for professional development of in-service personnel from organisations in different fields developed and offered two MOOCs. The University has been a front runner in developing collaborative projects and initiating innovative projects and programmes. The following two MOOCs were presented by WOU-PACE during February till May 2015

MOOC-1: OER in e-Learning (MOOC-OER)

This course was developed by The Commonwealth Educational Media Centre for Asia (CEMCA) jointly with WOU along with a few other institutions in Asia as part of the institutional capacity building for OER-based eLearning at the University. This MOOC was being offered with the support of CEMCA and expected to cater to the needs of all educators who are interested in exploring the Open Educational Resources (OERs) for an e-learning environment, both in F2F Learning as well as Open Distance Learning.

MOOC-2: Action Research (MOOC-AR)

This MOOC is created by the WOU, in cooperation with the Commonwealth of Learning (COL), Canada. WOU realised the need to equip the teachers with the knowledge and skills to inquire into a particular issue of current concern, with the aim of implementing a change in a specific situation, thus enabling them to reflect on their own classroom practice and improve it which could lead to one's own professional development.

Preparatory Activities

Lot of preparation was done with respect to developing the course structure, development of materials, activities and assignments, facilitators training and creation of online platform with all the required features to suit online course delivery and assessment.

Course Development

Each of the courses was envisaged to achieve a set of learning outcomes, which were translated into module titles and contents for each of modules as detailed in Table 1. The MOOC-OER in e-Learning had five modules whereas MOOC-AR had four modules.

With respect to AR, the four modules were developed in a workshop by experts, who were briefed about the issues such as writing styles, language, template for writing the content, content level, nature of activities to be included, length of the module, interlink between the modules. Each module was subjected to content and language editing and instructional design.

Table 1: Course Wise Learning Outcomes, Module Titles and Module's Launch Date

Course	Learning Outcome	Modules	Date/s of Launch
MOOC-OER	1. Demonstrate understanding of OER and argue in support of the use of OER.	Module-1: Concept and Practices of Open	9 Feb-22 Feb, 2015
	2. Use appropriate open license to release educational materials as OER.	Module 2: Licensing and Copyright	2 Mar-15 Mar, 2015
	3. Search and evaluate the quality of OER materials used in different contexts.	Module 3: Education Searching and Evaluation of OER Materials	23 Mar-5 Apr, 2015
	4. Design appropriate learning experiences for OER-based eLearning.	Module 4: Designing Learning Experiences using OER	13 April-26 Apr, 2015
	5. Offer OER based eLearning courses and programmes using appropriate technologies.	Module 5: Integrating OER in eLearning	4 May-17 May, 2015
MOOC-AR	1. Understand the concept of action research.	Module 1: Understanding Action Research	9 Feb-22 Feb 2015
	2. Understand the ways to write an action research report.		
	3. Design an action research for improving practice.	Module 2: Starting Action Research	2 Mar-15 Mar 2015
	4. Understand the process of data collection and data analysis.	Module 3: Planning the Action	23 Mar -5 Apr 2015
	5. Understand the role of reflection in action research.	Module 4: Writing an Action Research Proposal and report	13 Apr-26 Apr 2015
	6. Prepare an action research proposal.		

As mentioned the materials developed for the earlier project was used for MOOC-OER, however few changes were made in the materials with respect to the structure of the module, number of activities and assignments.

It was felt that too many activities and assignments may affect the completion rate, hence it was decided to have the minimum number of activities and assignments for each module in comparison to the usual numbers expected in the online university courses. The number of sections and the number of activities/assignments within modules varied according to the scope of the modules and expected outcomes. The details with respect to number of sections in the module, activities and assignments are given in the Table.

Table 2: Module Wise Number of Sections, Activities and Assignments

Course	Module No.	No. of Sections	No. of Learning activities	Assignments/assessments
MOOC-OER	Module 1	3	3	1
	Module 2	3	3	3
	Module 3	3	3	1
	Module 4	3	3	1
	Module 5	2	2	1
Total		14	14	7
MOOC-AR	Module 1	4	4	1
	Module 2	4	7	3
	Module 3	5	9	$\frac{1}{4}$
	Module 4	3	8	$\frac{1}{3}$
Total		16	28	13

Course Duration

Each course was of 3 months duration and each module was of two weeks with one week gap between modules. The gap of one week was planned to make sure that participants could have some breathing time between modules and if required to avail this time to complete the unfinished tasks of the previous module. Of the two weeks time participants were expected to spend about 20-30 hours to complete the module in all respects viz to study through the text materials, view the videos for which link is provided, carry out activities and assignment, participate in the discussion forum etc. Even after the closing date the participants were allowed to view the modules. The exact starting and closing date for each module is given in Table 1.

Facilitators' Training

Each module was coordinated by a separate faculty member of the University. The delivery of MOOCs was planned with a provision of providing opportunities to participants to interact with fellow participants on discussion forum and getting feedback on the activities/assignments from the module coordinators. A three day workshop was organised to orient and train the module coordinators on the processes and strategies of providing online facilitation, conducting assessment and providing feedback.

The three-day workshop involved examining the learning outcomes of the modules, developing assessment criteria in line with the learning outcomes, and moderating discussion in an online learning environment. Participants in the workshop explored strategies for supporting students, and how and when to provide feedback to online learners.

Further the participants engaged in online role play activities by taking part in simulation exercises for better understanding of online moderation. It involved groups of participants posting comments to issues raised as 'students' on WOU's learning management system, while a member moderated the discussion with the student-moderator roles being reversed in a subsequent activity.

MOOC Platform

The platform for hosting the MOOC was developed by the IT Department of WOU utilising the required IT expertise from within the University. The platform was developed on a Moodle version 2.5 open source software. The platform was named Wawasan4PACE. All the modules were uploaded on the LMS. Screenshot of the platform which was used is in Figures 1 and 2 given below. The platform had all the features for offering an online course.

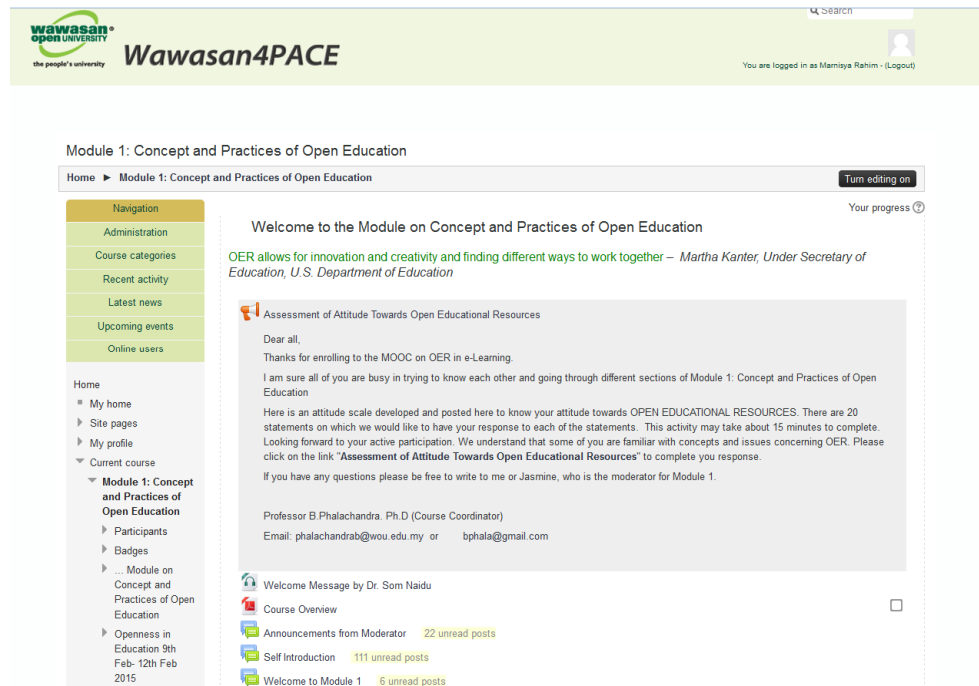


Figure 1: The MOOC offered using Moodle platform

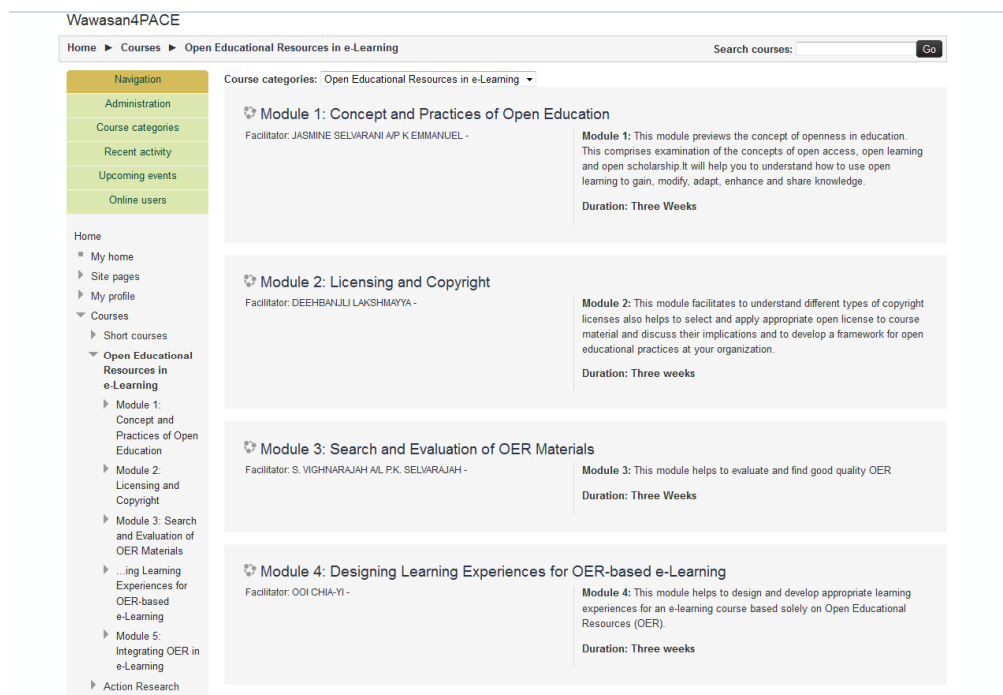


Figure 2: The structure of modules

Advocacy and Launch Seminar

The brochures for MOOC-OER in e-Learning and MOOC-AR were developed and distributed among various agencies and potential participants. The launch seminar was organised in the WOU campus on 29 January 2015 and it was attended by some 40 academic and academic support staff.

Open Educational Resources (OER) in e-Learning

Background

This is a course offered by the Centre for Professional Development and Continuing Education (PACE), under Wawasan Open University.

Project Team

1. Prof. Mohandes B. Menon
2. Prof. Phalanchandra Bhandigudi
3. Ms. Jasmine Selvarani Emmanuel
4. Ms. Deebanjali Lakshmiyaya
5. Dr. S. Vignarajah
6. Dr. Ooi Chia-Yi
7. Mr. Prakash V. Arumagan

Overview of the Programme

Open Educational Resources (OER) have emerged as one of the most innovative teaching and learning tools as well as a cost-effective mechanism to improve the quality of educational offerings by optimising the use of available resources.

OERs via e-Learning now offer universities (especially Open Universities) that depend on printed distance learning materials a more economical and expeditious alternative to develop and offer their courses and programmes.

This programme was developed to facilitate this cause and to promote the use of OER in educational institutions. Initially an effort by the The Commonwealth Educational Media Centre for Asia (CEMCA) as part of the Institutional capacity building for OER-based e-learning at Wawasan Open University (WOU), faculty members of WOU and several other institutions in Asia have contributed to the development of the contents with the guidance and support of an international group of academics and experts from India, Sri Lanka and Australia.

Learning Outcomes

After completion of all the five modules, the participants will be able to:

1. Demonstrate understanding of OER and argue in support of the use of OER.
2. Use appropriate open license to release educational materials as OER.
3. Search and evaluate the quality of OER materials used in different contexts.
4. Design appropriate learning experiences for OER-based e-learning.
5. Offer OER-based e-learning courses and programmes using appropriate technologies.

Course Content

This Professional Development Programme consists of five (5) modules:

Module	Title	Coordinator
Module 1	Concept and Practices of Open Education	Ms. Jasmine Selvarani Emmanuel
Module 2	Licensing and Copyright	Ms. Deebanjali Lakshmiyaya
Module 3	Searching and Evaluation of OER Materials	Dr. S. Vignarajah
Module 4	Designing Learning Experiences using OER	Dr. Ooi Chia-Yi
Module 5	Integrating OER in e-learning	Mr. Prakash V. Arumagan

Participation

Interested users may register online at <http://wawasanpace.wou.edu.my/>

Type of Participants	MOOC guest learners	Registered on-line learners	Early bird Registered on-line learners
Guidance	Self-learning	Tutor support and certification	Tutor support and certification
Cost	Free	RM750	RM600*

*Early bird discount for those who register by 27th January 2015

Course Implementation

Learning for each course module is expected to be completed in three weeks from the end of the previous module. The tentative dates for the first series of this course are as follows:

Module	1	2	3	4	5
Start Date	9 th Feb - 12 th Feb	27 th Mar - 30 th Mar	13 th Apr - 16 th Apr	27 th Apr - 30 th Apr	11 th May - 14 th May

Course Evaluation

Monitoring of course implementation and evaluation shall be carried out during and after completion, that is during the period from January to April 2015. Data shall be obtained from analysis of the LMS and an end of course evaluation survey focusing on the following:

- o Participation
- o Performance
- o Content
- o Learning

Figure 3: The brochures for the MOOCs

Award of Badges and Certificate

The criteria for award of badges included completing learning activities, participation in the discussion forum and submitting the assignment of acceptable quality. The participants who received all the module badges were eligible for receiving the course completion certificate.

Launch of MOOCs

The modules were uploaded on the LMS (Wawasan4PACE), with activities and assignment to be carried out by the participants. Each module was of 2 week duration with one week interval for finalizing the previous module and preparing for the next module. The participants were expected to go through different sections of the modules and respond to the issues raised by the module facilitators. Each module was facilitated by an internal facilitator from WOU. The module presentation occurred from second week of Feb, 2015 up to the last week of April, 2015.

Participants' Enrolment

An application form was developed and posted on the LMS and also circulated among the potential participants and institutions through mail. After receiving the application from the participants, the Wawasan4PACE administrator created a log-in password for each and communicated to them to access the materials. This arrangement though complex and time consuming was still followed in view of certain technical and security issues concerning the platform, though the system could have allowed the participants to generate their own passwords.

Initially, it was planned to have provision for two categories of participants – one MOOC guest learners (view only) and another registered online learners with facilitator support and certification for a fee of RM 750.00 for OER in e-Learning and RM.200 for AR. Due to some technical and administrative reasons, it was decided to offer both courses free and also to provide online facilitators tutor support and certification to all.

Participants' Profile

Sixty eight (68) persons enrolled for MOOC-OER and 364 enrolled for MOOC-AR from 12 countries as shown in the Table 3. The analysis of the personal data of participants reveals that most of them were of the age group of 30-49 years and educational level varied from school leaving certificate to Ph.D. level. The participants for AR were teacher trainees, teachers, lecturers, administrators, consultants, education and research officers. In case of MOOC-OER the participants were University faculty members, academic consultants, managers of open school and ODL coordinators. From the profile it could be noticed that the MOOC-OER participant group was of more homogeneous in comparison to MOOC-AR group of participants with respect to job profile. Participants reported varied reasons for joining the course, some of them are given below.

Christina Kiu Siaw

I'm a final-year undergraduate who is taking Bachelor of Education (Teaching English as a Second Language). I'm now having three-month practicum at a local Chinese primary school. As I'm a final-year student, I'm required to carry out an action research. Therefore, I hope to learn more about action research from this course. I'll be accessing this course during weekends (Friday & Saturday) from my hostel as I'm busy with school works during weekdays.

Ronaltia

I have a B.Ed. in primary education from the University of Trinidad and Tobago. I am presently in my second year at the University of the West Indies Open campus pursuing a B.Ed. in Educational Leadership and Management. This course is fully online so I have had some experience in doing online courses. This course is important to me because I will gain insightful knowledge that would help me better understand how to use Action Research in education.

Paulus I.T. Kashiimbi

I am a Namibian and live in Okahandja where I work as a Deputy Director: Professional and Resource Development Division (The National Institute for Educational Development). I am a holder of Masters of Business Administration (MBA) and very keen to embark on this program because part of my works involve overseeing the activities of the Research Sub-division.

Kapompole ferdinand

Professionally, am a teacher/head of the mathematics department at Solwezi Day Secondary School based in Northwestern province of Zambia, in a rural district of Solwezi. When I heard about this short course in ACTION RESEARCH, I was excited because this is one area where I am greatly lacking-in short, I lack research skills (the blame is on our education curriculum-it lacks research components unless one undertakes a masters program). This course will indeed capacitate me with knowledge and skills which I strongly need as a teacher of mathematics.

Arleen Tampus

I enrolled as a guest in this course because I am quite interested in how MOOCs are administered.

Conor Wickham

Hi, my name's Conor Wickham, i'm a 33 year old male from Ireland. I'm currently studying a Masters in Education and Training Management (e-learning) at Dublin City University. My primary Degree is in Fine Art and i hold a Higher Diploma in Teaching. I'm currently working in Adult Further Education. My aim is to obtain an in-depth understanding of Action Research.

Antoinette

My interest in OER is really based on the nature of my work. I'm a programme developer for eLearning at the Namibian College of Open Learning (NAMCOL). In our material development for both print and eLearning we depend highly on the use of OERs.

Wilhelmina Louw

Basically, all these information and talk on OER is new to me. I am in-charge of a training institute in a church where we train volunteers interested in helping to serve others in various ways.

Figure 4: Reasons for enrolling to MOOCs as reported by participants

Participation in the Course

Though sixty eight (68) persons enrolled for MOOC-OER there was a gradual decrease in the rate of participation over 5 modules. The first module saw 60, second with 19, third with 11, fourth with 8 and fifth with 5 participants. Most of the participants attempted activities and participated in the dialogue forum, however very few submitted assignments.

In MOOC-AR course also there was a gradual decrease in the participation rate. Altogether 368 participants registered. However, the number of participants who actually accessed the course was 165 participants for Module 1, 43 for Module 2, 32 for Module 3 and 21 for Module 4.

Table 3: Number Enrolled, Number Participated and the Nationality of Participants

Courses	Number Enrolled	Number participated in the first module	Nationality of Participants
MOOC-OER	68	60 (88%)	India, Kenya, Malaysia, Malawi, Magnolia, Namibia, Philippines, South Africa, Thailand, Trinidad, Singapore and Zambia
MOOC-AR	364	163 (45%)	India, Ireland, Kenya, Lesotho, Malaysia, Malawi, Namibia, Philippines, Trinidad, Singapore, Zambia and Uganda

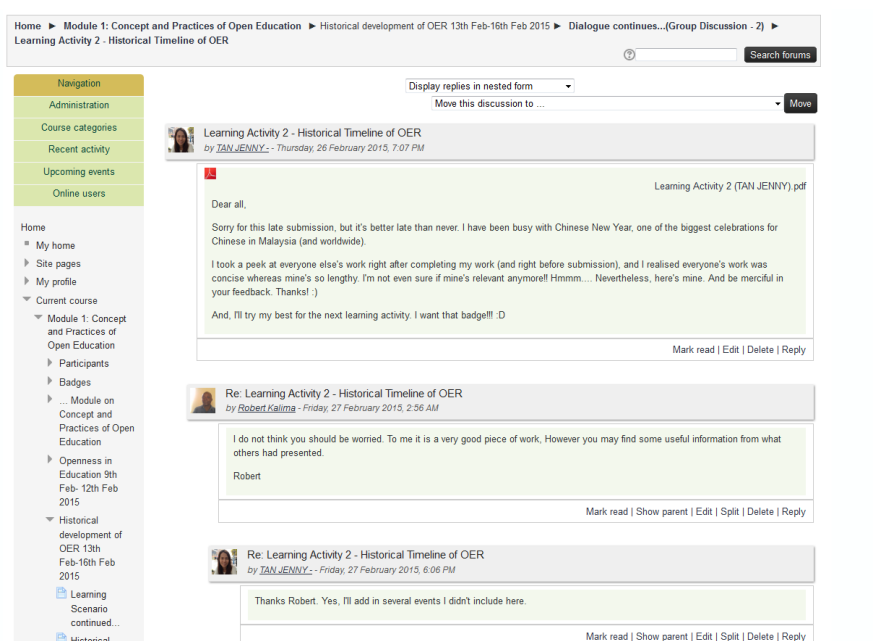


Figure 5: Forum discussion among the participants

Table 4: Progression of Participants Across Modules, Number of Participants Qualified for Badges and Certificate of Completion.

Courses	Module 1	Module 2	Module 3	Module 4	Module 5	Completion certification
MOOC-OER	60(88%)	19(28%)	11(16%)	8(12%)	5(7%)	1(1.5%)
MOOC-AR	163	43(12%)	32 (9%)	23(6%)	---	2 (0.5%)
Badges Awarded for MOOC-OER participants	8 (12%)	4 (6%)	1(1.5 %)	1(1.5%)	1(1.5)	1(1.5%)
Badges Awarded for MOOC-AR participants	4 (1%)	4 (1%)	4 (1%)	4 (1%)	-----	2 (0.5%)

One could notice from the tables 3 and 4 that the participation rate was suddenly dropped from enrolment to module 1(AR) by 55%, module 1 to 2 and then there was a gradual decrease across the modules. In case of OER also there is a drop by 12% from enrolment to module 1 and then gradual decrease in participation across the modules. Also one could notice that the module wise completion rate (submission of assignment) was very low in comparison to participation rate. This indicate that the participants were not so keen to submit assignments, getting badges and receiving certificate of completion but more eager to go through the course materials and participate in the discussion forum.

Wawasan4PACE
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You are logged in as Marniya Rahim - (Logout)

Assignment on Module 3

Home ► Module 3: Planning the Action ► Section 5: Role of Reflection in Action Research ► Assignment on Module 3

Navigation

- Administration
- Course categories
- Recent activity
- Upcoming events
- Online users

Home

- My home
- Site pages
- My profile
- Current course
 - Module 3: Planning the Action
 - Participants
 - Badges
 - General
 - Section 1: Organising the Action Plan
 - ... Anticipating Implementation Issues of the Action
 - ... Planning for the Collection of Evidence on the Action

Assignment on Module 3

Assignment for Module 3

Discuss why is professional reflection an important component of action planning and explain two main ways that teacher researchers can engage in reflective practice as part of their action planning? (Limit your answer to 1000 words)

Grading summary

Participants	365
Submitted	4
Needs grading	4
Due date	Saturday, 30 May 2015, 4:50 PM
Time remaining	Assignment is due

[View/grade all submissions](#)

Submission status

Submission status	No attempt
Grading status	Not graded
Due date	Saturday, 30 May 2015, 4:50 PM
Time remaining	Assignment is overdue by: 122 days 22 hours

Figure 6: Sample of assignment submission status and grading in Moodle

Module 3: Planning the Action : Manage badges

Number of badges available: 1

[Add a new badge](#)

Name	Badge status	Criteria	Recipients	Actions
Badge for Module 3	Available to users	o Awarded by: Facilitator	4	View Edit Delete Share

Figure 7: Badge of the course

Participants' Feedback

Participants provided feedback on issues like reasons for not completing the course, nature and usefulness of materials, what they liked most and least in the course and suggestions for future considerations etc. The feedback analysis indicates that:

- The top 4 reasons for not completing the course were: not enough time, no good Internet connections to access, loss of momentum as the course progressed, and inability to follow the course due to technical terminologies.
- Course materials were useful, informative and users' friendly, richness and adequacy of content. Links provided to supplement the main instructional materials which made comprehension of the subject matter easier, immediate feedback provided by the facilitators, course content relevant to the topic of OERs.
- Need for one or two face to face interactions among participants for them to at least be aware of each other.
- The language of video support was difficult to understand. A lot of reading, sometimes a bit difficult to comprehend which required time to really understand.
- Like to have another opportunity to finish the course in future. Unfortunately connectivity is a problem when going into the rural areas in our country.
- Suggestions for considerations: more time, less reading. If possible, the material should also be provided as running matter not in bit and pieces, also consider improving system/interface to participant interaction by including automated response questions which would make a participant motivated to read on. Live class sessions which would make participants feel emotional closeness once in a while.

Concluding Remarks

The challenges faced during the course implementation were slow start from the initial launch, and the marked decrease in participation rate as the course progressed. The participants had difficulty in accessing the materials due to low connectivity. It seems that getting the badges and certificate were never the criteria for enrolling the course but understanding the issues and concepts relating to AR and OER was the focus. In order to increase the completion rate one may have to reduce the duration and the length of the course, provide more time for participation and to complete the course. Probably another issue is with respect to the timings of the programme launch, it is quite possible that Feb-May months of the year may not be appropriate time if the target group is teachers, teacher educators and academic staff working in the educational institutions, as they are likely to be busy during those months. There seems to be a need to include occasional synchronous interactive sessions and encourage learners to form study groups through social media.

In order to sustain the outputs of the project as well as the capacity developed in the academic and support staff this project was embedded into the activities of the Centre for Professional Development and Continuing Education (WOU-PACE) Hence the MOOCs developed under the project was offered as one of the pioneer MOOCs of the Centre. So, the experience gained in the project will get sustained in the programme of WOU-PACE. An improved version of the platform based on Moodle or any other suitable open source software will be developed for future use.

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MOBILE SOLUTIONS FOR SYNCHRONIZED AND OFFLINE VERSION OF OPEN EDUCATIONAL RESOURCES

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Abstract

The development of open educational resources (OERs) is based on the assumption that users have access to the Web, and that they have a broadband Internet connection. However, a fast Internet connection is not always available worldwide. Many areas in the world, especially in developing countries, also do not have constant access to the Web. This is true for the Philippines, which has the 2nd slowest Internet speed in Asia. It also has a significant number of educational institutions in remote areas. A static version or local copy of OERs may be a solution for this, but an undesirable consequence is that educational institutions would not have the newest and most recent information, content and updates of these OERs. To address the issues mentioned above, two mobile apps for Android devices were developed and generated to allow offline viewing of OERs. Internet connection is only needed whenever users wish to download latest updates of OER content and synchronize them with the apps. In this study, syncing is limited to texts and images only. Moreover, according to the usability test conducted among potential users, system usability ratings of 73.17 and 71.82 were obtained for the two Android apps. These ratings are both higher than the global mean score of 68, implying that both apps are relatively usable.

Keywords: OER, offline viewing, syncing, usability test

Introduction

The Internet has indeed made the world smaller and better. It has become an effective tool to spread and acquire information quickly. As the Internet continues to evolve, it has made life more convenient and information more ubiquitous. With growing ownership of mobile devices such as smartphones and tablets, Internet can be accessed almost anytime and anywhere. This recent development has a big potential to aid in open and distance education. Students can simply use their mobile devices to view web-learning resources such as open educational resources wherever and whenever they like.

At first glance, open educational resources (OERs) and mobile devices have nothing to do with each other. But these days, mobile devices are rapidly replacing normal computers in creating and studying educational resources. Repositories where educational resources can be stored are increasingly established. These resources can be searched using a web browser, and then these can be incorporated into one's own educational materials. Arranging and processing materials and resources to create new publications is done in a computer. But most open resources are not suitable for use in mobile devices and most authoring tools lack mobile support. The challenge for OER providers in general is to encourage use of content and materials that are mobile friendly.

In 2015, Habito, Figueroa and Pugoy were able to create mobile-friendly OERs that used WordPress as the OER repository. They chose WordPress because of its support for responsive web design (RWD), one of the revolutionary and web design trends nowadays. The main goal of RWD is to automatically adapt websites to different screen sizes, ranging from wide-screen desktops to tiny smartphones. It also simplifies page elements for mobile use and resizes images to suit various screen resolutions. To view the OERs, the user either uses a mobile browser in his device or use the Android app that the researchers developed. Nonetheless, this has made development and viewing of mobile-friendly OERs less cumbersome and more convenient, both for educators and students alike.

Statement of the Problem

Though mobile-friendly OERs have been achieved in prior studies, there are still other issues that need to be considered, especially in the context of the Philippines. The development of OERs is based on the assumption that users have access to the Web and that they have a broadband Internet connection. However, this is the case in the Philippines:

- The Philippines has the 2nd slowest Internet speed in Asia.
- A significant number of educational institutions are in remote areas where Internet access is little to none.

To address the issues above, offline or local versions of OERs are ideal; these can be used without being connected to the Internet. For educators in areas where bandwidth is limited, where there is very little access to the Internet, or where Internet access is prohibitively expensive, offline versions of OERs are tremendously valuable. Local OERs greatly increase the speed at which users can access such resources. However, the unintended consequence of this is that educational institutions in such areas would not have the newest and latest content and updates of OERs. Therefore, there is a need to develop mobile apps that would consider the issues raised above.

Objectives of the Study

The general objective of this study is to develop Android apps that primarily provide the following features:

- Enabling users to view and access OERs offline.
- Allowing users to download latest OER updates and sync them with the apps whenever they are connected to the Internet. Syncing is only limited to texts and images.

Another objective of this study is to evaluate these apps by conducting a usability test based on the System Usability Scale among potential users.

Methodology

WordPress as the OER Repository

WordPress allows users to create and manage website content even without any prior web programming experiences. Using WordPress, OERs can be easily organized, created and modified. Moreover, it supports responsive web design, which renders digital content to be easily viewable and readable regardless of the screen size of the device used to access them.

To demonstrate the results of this study, the OER that was used was Philippine Biodiversity. Its WordPress site could be accessed through this web address: <http://www.learnbiodiversity.com>.

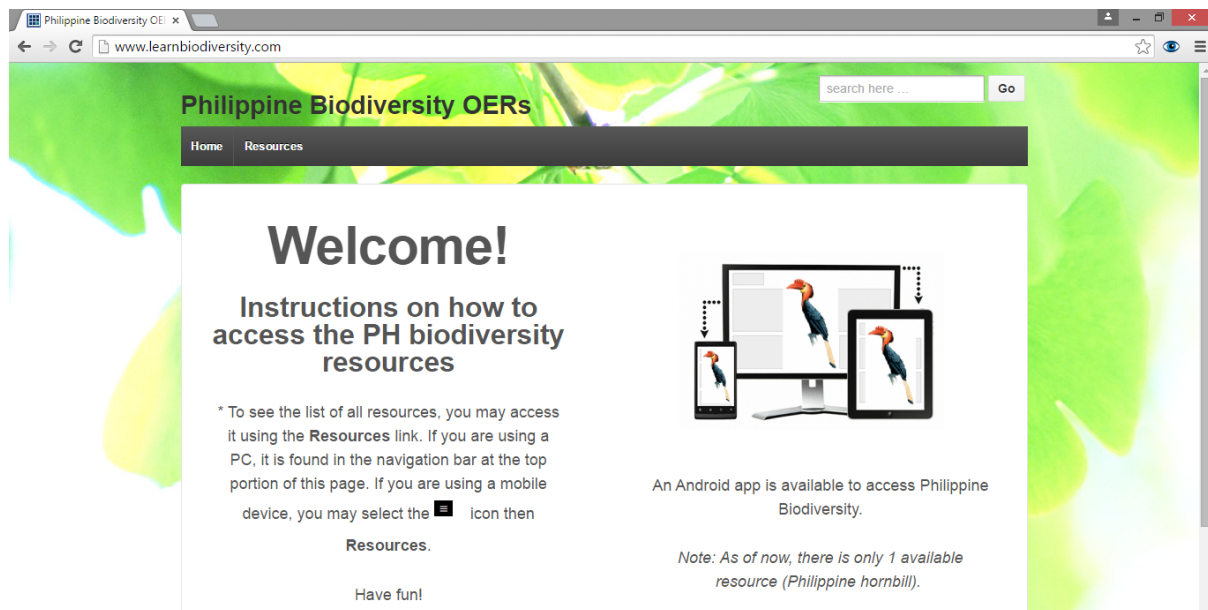


Figure 1: Screenshot of Philippine Biodiversity OER

Development and Generation of Android Apps

For this study, 2 Android apps were developed to support offline viewing and downloading/synchronization of latest OER content and updates. Listed below are the approaches used in creating such apps.

1. Browser-Like Android App (BLAP) and HTTrack Approach

In this approach, an Android app (BLAP) that behaves similarly to a web browser was developed. Unlike a normal browser that accesses any website, this app was tailor-made to only access and render the content of the local copy of OERs synchronized and downloaded from the WordPress repository.

To successfully implement the browser-like behaviour, the app utilizes the WebView class, which basically displays web pages. This class is the basis upon which one can roll his own web browser or simply display some online content within an Android app he created.

```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    wv = (WebView) findViewById(R.id.webView);
    wv.setWebViewClient(new BLAPWebViewClient());
    wv.getSettings().setJavaScriptEnabled(true);
    String base_url = Environment.getExternalStorageDirectory().getAbsolutePath().toString();
    wv.loadUrl("file:/// " + base_url + "/Download/HTTrack/Websites/BIO/www.learnbiodiversity.com/index.html");
}

private class BLAPWebViewClient extends WebViewClient {
    @Override
    public boolean shouldOverrideUrlLoading(WebView view, String url) {
        view.loadUrl(url);
        return true;
    }
}
```

Figure 2: Code snippet used to implement BLAP

Furthermore, syncing can be initiated by using an external Android app called HTTrack. Upon installing HTTrack from the Google Play Store, it allows downloading of web content for local hosting and viewing. It can copy the web content from the WordPress repository to the device itself. Nonetheless, the BLAP and HTTrack work hand in hand.

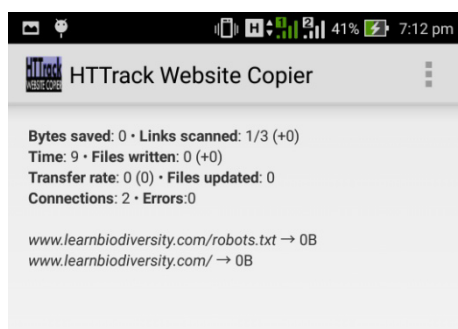


Figure 3: Syncing process using HTTrack

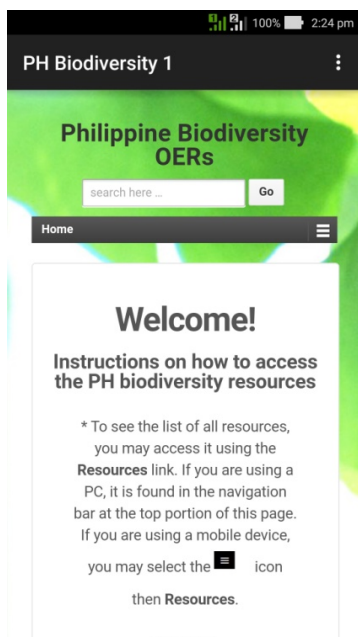


Figure 4: 1st app for PH Biodiversity OERs

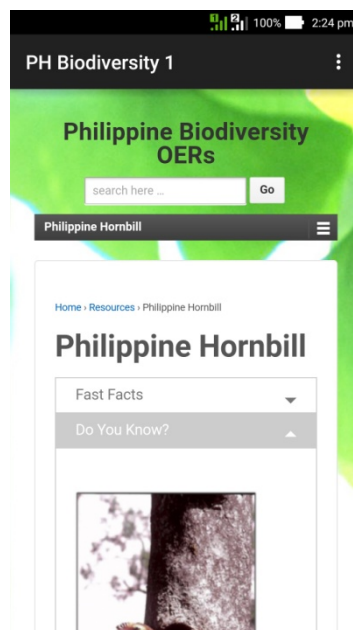


Figure 5: Sample OER content

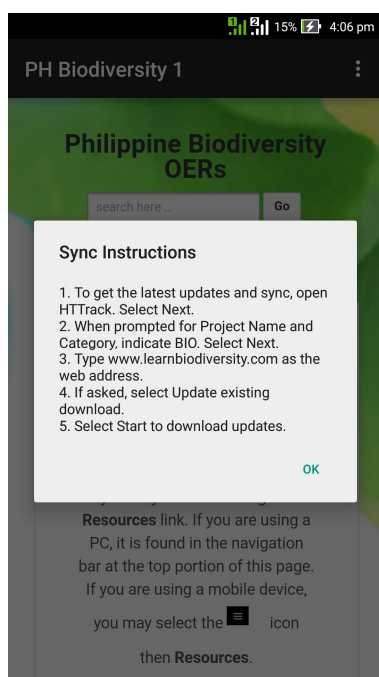


Figure 6: Sync instructions for the 1stapp

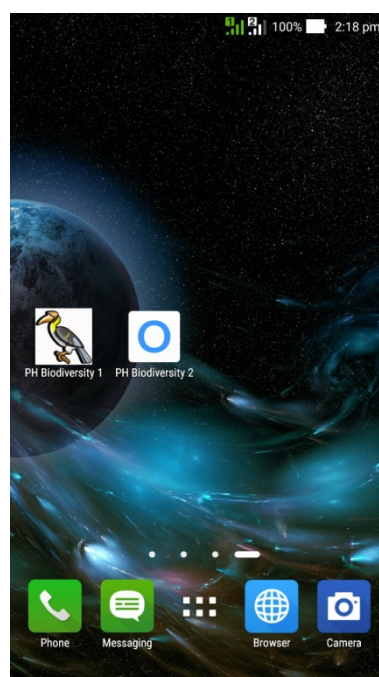


Figure 7: Device homescreen showing the 2 apps

2. Worona and Corona-Generated Android App Approach

Since the OER repository was hosted in WordPress, Worona was used. Worona is a WordPress plugin that turns a WordPress site into an Android app. To generate the Android app, Corona was run from a computer. Corona is a software that allows developers to build mobile apps, after adjusting and modifying settings in a configuration file, such as the web address of the OER repository.

```
-- START THE LOG
worona.log:start( { level = "WARNING", reset_log = true, console
= true, file = "log", previous_file = "previous_log" } )

-- WORONA APP CONFIGURATION
worona.current_style      = "default"
Choose your theme.
worona.wp_url             = "http://www.learnbiodiversity.com"
-- Enter the url from which the app will read the data.
worona.app_title          = "PH Biodiversity"
Enter the main title of your app.
worona.app_number_of_posts = 20 -- Choose the max
number of posts to be shown in your app. Worona will always
retrieve the latest posts.
worona.content_type       = "post"
```

Figure 8: Corona configuration file

The syncing process can be initiated in this app by simply selecting the circle-like Sync icon on the top right portion of the app.



Figure 9: 2nd app for PH Biodiversity OERs

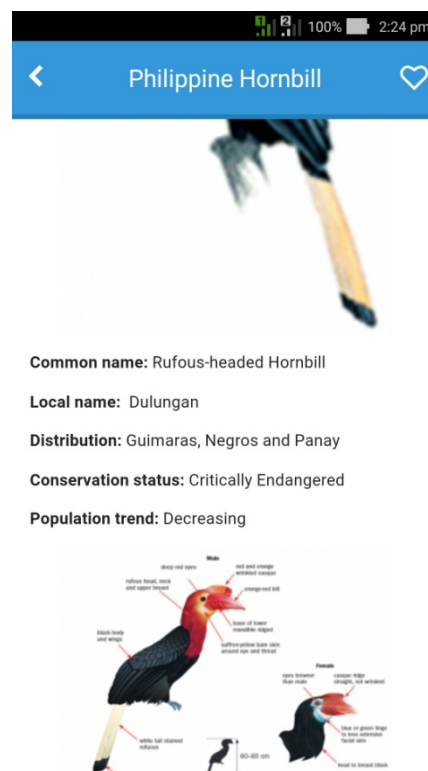


Figure 10: Sample OER content

Results and Discussions

A usability test based on the System Usability Scale (SUS) was given to 154 respondents. This was done to evaluate the usability of the 2 Android apps described above. The SUS provides a quick, reliable tool for measuring usability. It consists of 10 items which the respondents can rate on a 5-point scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Listed below are the items of the questionnaire.

1. I think that I would like to use theapp frequently.
2. I found the app unnecessarily complex.
3. I thought the app was easy to use.
4. I think that I would need the support of a technical person to be able to use theapp.
5. I found the various functions in theapp were well integrated.
6. I thought there was too much inconsistency in theapp.
7. I would imagine that most people would learn to use theapp very quickly.
8. I found the app very cumbersome to use.
9. I felt very confident using the app.
10. I needed to learn a lot of things before I could get going with theapp.

The SUS has become an industry standard, with references in over 1300 articles and publications. It can effectively differentiate between usable and unusable systems. To compute the usability score from each respondent, the following steps are applied.

1. For odd-numbered items: Subtract 1 from the respondent/user response.
2. For even-numbered items: Subtract the respondent/user response from 5.
3. Get the sum of the converted responses and multiply that total by 2.5.

Once the usability scores from each respondent are computed, the average is obtained from them. If this usability score is higher than the global meanscore of 68, the score is considered to be above-average. This means that the system or app being evaluated is relatively usable.

Below are the results and interpretation of the usability test applied to this study.

- An SUS score of 73.17 was obtained for the first Android app (BLAP/HTTrack approach).
- An SUS score of 71.82 was obtained for the second Android (Worona/Corona approach).
- This means that both Android apps could be easily used by the respondents.
- Both SUS scores do not differ much from the SUS score (72.12) of the original, desktop version.
- The first Android app is more usable than the second Android app.

Moreover, the following questions were also asked to the respondents.

1. Would you recommend using a mobile device for OER access?
87.96% of the respondents said that they would recommend it, while the other 12.03% said otherwise.
2. How useful was it?
64.70% of the respondents found it very useful, 29.41% found it moderately useful and 5.88% found it little useful.

3. Which between of the 2 apps do you prefer?
56.39% of the respondents preferred the first Android app, 34.58% preferred the second Android app, and 9.02% preferred neither. Based on their comments, the first app has better look and feel, better organization and easier navigation. However, one disadvantage of using it is that the syncing feature is quite cumbersome to manage. On the other hand, the second app has an easier syncing process but the look and feel looks too bare.
4. Was offline syncing relevant to your situation?
76.69% of the respondents agreed that it was relevant while the other 23.30% disagreed. Those who agreed noted that syncing is practical, useful and helpful to keep materials available even when offline. It is because they do not have Internet all the time and that they occasionally go to places where there is no Internet access. On the other hand, those who disagreed said that they always have good Internet connection.

Conclusion

The offline viewing and syncing of OERs have been successfully implemented in mobile apps. They were well-received, as evidenced in their good SUS ratings. This study has a big potential in aiding teaching and learning, especially for learners in remote areas. Future studies shall be conducted and further prototypes shall be developed for syncing OER materials in other formats such as videos and audios, and on optimizing and improving the syncing process.

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ASYNTHETIC REVIEW OF SECOND LIFE PLATFORM INTEGRATION INTO EFL CLASSROOM IN IRAQ

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Abstract

The issues of teacher-centred classroom and limited support to enhance oral proficiency and interactive learning environment in Iraq foreign language classroom is a reality in many middle eastern countries including Iraq. With the development of information technology (IT) in the last two decades, computers have been widely used in the field of English language learning and teaching. This paper is intended to review the feasibility and potential of Second Life (SL) as a learning platform in an online synchronous simulated environment to support the learning of English as a Foreign Language (EFL) in Iraq. This paper is also intended to provide a better understanding of SL salient features and capabilities and how SL may be used in the EFL learning and teaching in Iraq. This paper is devoted to discovering the possibilities of using Second Life (SL) as an instrumental tool in promoting and enhancing Iraqi EFL learning in the future.

Keywords: *EFL learning, Second Life, Computer mediated communication, Virtual worlds*

Introduction

In recent years, with the spread of English through information technology, education and trades, English has become an international language and has played an important role in the communication of every country. In Iraq, English is considered one of the major foreign languages taught in schools and universities. It has been taught as a compulsory subject from primary school up to university. 12 years study of English in mainstream education in Iraq has not made Iraqi students efficient in English. Learning English has always been a great challenge for EFL students in the country (Al-Hosni, 2014). With the continuous change in the world we live, helping students to learn other languages effectively, particularly the English language is of great importance.

In Iraq, students have limited opportunities to interact and communicate with the target foreign language (Elameer & Idrus, 2010). Nunan (1999) and Soliman (2014) have suggested that students who spend their time learning English with traditional learning methods are unable to actively use the English language well to enhance their communication skills. Thus, it is therefore imperative that this traditional learning be supplemented with more innovative techniques that can reach students and enhances the learning experiences where traditional learning cannot.

The use of technology in language teaching and learning has increased dramatically in the last two decades. Computer Assisted Language Learning (CALL) researchers believe that new and emerging technologies have the potential to support and improve education (Wang, Burton & Falls, 2012). CALL requires applying the principles of computer-assisted language learning to language learning context. It is used for computer programs to improve learning (Ifeoma, 2010). Of recent development, the research area of CALL has changed. Instead of considering computer as a tool, it is now considered as a virtual learning environment where learners can collaborate and interact with other learners and native speakers in a more meaningful and fun learning (Hamidi, Montazeri, Razavi, & Aziznejed, 2014). One such alternative is provided by *Second life* (SL).

Thus, with the aim of constructing an interactive learning environment where students potentially can experience conversational interaction with native speakers and other learners, Second Life platform as a computer mediated communication is reviewed in this paper on its capabilities to enhance the teaching of English language as a foreign language in Iraq and is suggested for integration with traditional learning approaches on the basis of relevant theory and research.

EFL Instruction in Iraq

The English language is taught as a foreign language in Iraq for the purpose of international communication. Despite the fact that learning of English as a foreign language has occupied an important place in Iraq education system (Ministry of Education, Iraq, 2001) the level of achievement of many learners remains unsatisfactory and below expected levels. In other words, many learners leave schools unable to communicate and convey their meanings in English.

According to Taqi (2008) EFL teaching in Iraq was based on Grammar Translation Method (GTM) of language teaching. In GTM, the instructor's role is to explain grammar rules and meaning of words in the student's native language, organize practice, and correct student's mistakes whereas the student's role is to pay careful attention to the instructor's explanations, and corrections, memorize rules and vocabulary list, and carefully do the practice tasks the instructor's sets (Richards & Rodgers, 2001). Nunan (1999) mentions that in the grammar translation method, learners typically spend years learning English and yet many of them are still unable to use the language effectively.

Elameer & Idrus (2010) inserted that Education system in Iraq is still working with the old and traditional type of education such as face-to-face interaction, requiring teacher and students to be together in the classroom. Kazu & Demirkol (2014) stated that traditional language learning is not an effective method for enhancing learners' participation, interaction and communication competence. The role of the teacher in the classroom is to explain and disseminate information to the students. There is no opportunity for the students to practise their language skills other than receiving input and answering questions in exams. Students are not encouraged to be independent and autonomous in different tasks to express their ideas (Taqi, 2008). This is a great area of concern that necessitates attention and research.

Educators, administrators and curriculum developers have the responsibility to focus on this shortcoming in order to improve English learning in Iraq. All stakeholders of EFL in Iraq must be keen to improve EFL teaching and learning in Iraq. New approaches and methods must be discovered, tested and considered in search of the most appropriate approaches to teach English to Iraqi EFL learners in order for their English performance to meet the international demands and be able to fully and successfully participate in the international community. In this regard, this study would like to integrate Second Life platform as a tool to aid the traditional education method in learning English for Iraqi EFL learners.

Theoretical Perspective of Interaction in Social-constructivist Theory

Formalization of the constructivism learning theory is generally attributed to Jean Piaget, who expressed mechanisms by which knowledge is constructed by individuals. Constructivism is a theory of Knowledge which has its roots in philosophy, psychology and other disciplines and its objective is to clarify how students are able to know the world (Glaserfeld, 1989). Many researchers have applied Vygotsky's social constructivist theory to second and foreign language teaching and learning (Yang & Wilson, 2006; Lantolf & Thorne, 2006; Swain, Kinnear & Steinman, 2010). These researchers have emphasized the significant role that social and cultural context play in the process of language learning and the importance of participating in meaningful communication activities with other members of a speaking community.

The role of interaction has been emphasised by the social-constructivist learning theory rooted by Lee Vygotsky's work. Vygotsky (1978) pointed out that learning occurs through interaction. He suggested that knowledge is first constructed in a social context and is then appropriated by learners. He also asserts that the concept of development of the learners' learning could not be understood without reference to the social and cultural context in which these concepts are embedded. Therefore, social constructivism requires one primary element: two or more learners. Those learners must be involved in some form of interaction for knowledge to be constructed (Teague, 2000). They make meanings through the interactions with each other and with the environment they live in.

The initial fundamental factor in social constructivism is the use of language in learning. Poehner (2008) stated that the social constructivist theory emphasised the role of social and cultural contexts, environments, and the interaction with native speakers or other language learners who enhance the students' performance and production of language functions that would not be performed by students. In addition, Lightbown and Spada (2001) clarified that students advance to higher levels of linguistic knowledge when they interact and collaborate with other learners of second language who are more knowledgeable than they are.

In the view of the social constructivist theory, an individual constructs knowledge and meaning through social interaction. Learners interact with the tools and objects in the virtual learning environment. This allows the students to construct their own understanding and meaning (Coffman & Klinger, 2007).

Task-based Language Learning/Teaching

Task-based language learning (TBLL), also known as task-based language teaching (TBLT) focuses on the use of authentic language and on asking learners to do significant tasks using the target language (L2). TBLL is an approach in which communicative and meaningful tasks play an important role in language learning and in which the process of using language in communication carries more importance than the production of correct language forms. This makes TBLL especially useful for developing L2 fluency and learner's confidence. Thus, TBLL is seen as one model of communicative language teaching (CLT) in terms of regarding authentic meaningful communication as the primary goal of language learning (Richards & Rodgers, 2001).

Empirical studies and theoretical motivation in task-based language learning has been prompted by proposals for task-based language teaching (TBLT) (Robinson, 2011). TBLT can be defined as a teaching approach which is based on the use of communicative and interactive tasks as the core unit of planning and instruction in language teaching. It is an extension of the characteristics of CLT and the attempt by its supporters to apply the principles of target language to teaching. It focuses on language acquisition, language itself, and language performance simultaneously. Yet another major point about task based teaching is its being students-centred and enhances students' confidence and enthusiasm (Motlagh, Jafari & Yazdani, 2014).

TBLT is believed to be one of the approaches that emphasise real world and creative language use. It is believed that with TBLT, many students are provided with the willingness and confidence to interact with other learners effectively in foreign language. In other words, it promotes students' confidence and enthusiasm. In TBLT, the main focus is empowering meaningful interaction. It is not designed for examination, but to train autonomous students who can use English outside the classroom in authentic situations (Ellis, 2003).

Some linguists and Researchers have agreed that communication with other learners or native speakers of target language has been recognized as an essential part of the learning process. It means that CLT is needed during the learning process where collaboration among learners is essential as well (Ellis, 2003). In this context, the learning process should be arranged in real world situations that

require communication. It is expected that learners will have the opportunity to interact with one another in L2.

TBLT is defined as teaching/learning that is completely based on tasks. The concept of tasks as meaningful and useful activities is closely related to the principle of learning by doing, where learners are encouraged to learn experientially and put into practice and use what they learn (Ellis, 2003). A task is generally described as an activity that requires learners to use language, with emphasis on meaning, to attain an objective (Bygate, Skehan & Swain, 2001). Furthermore, a task refers to a language learning attempt that requires students to comprehend, manipulate and produce L2 as they perform the set task, involving real-life language (Richards & Rodgers, 2001).

According to Ellis (2003) tasks involve focusing on utilizing four language skills, real-world language use, and the activation of the cognitive process. In addition Nunan (1989) clarifies that working with tasks requires paying specific attention to the meaning rather than to the form. Therefore, tasks are activities in which L2 is used for a communicative purpose to achieve an outcome. Masputeriah Hamzah (2001) cited in Maslamani (2013) clarified that for tasks to be designed in computer mediated communication environments, they must be structured appropriately. He summarised four significant factors that must be taken into consideration when designating learning communicative tasks. The four includes the followings: 1) Tasks must have two dimensions; the interactional activity that involves communicative information; and the communication target that involves target orientation and outcome options; 2) Two-way information-gap tasks create more discussion work than one-way information-gap ones, because imperfect information is held by each learner who needs to collaborate and exchange information to complete a task; 3) Communication within small groups produces more input in the target language where students have more opportunities to modify their interaction, and 4) Closed, convergent, difficult tasks create more discussions of meaning than open, divergent, easy ones.

All the definitions above emphasize that task is an activity that involves language students to use language through communicative purpose to achieve an outcome where meaning is the main focus rather than the form. Therefore, instructors have to develop new ways to attract learners' attention to the tasks in order to motivate them. Tasks should be developed based on the goals selected that increase learners' motivation. Second Life as a platform may provide an effective learning environment for EFL learners beyond the traditional learning environment as it has all the above descriptions to support language learning.

Points of Intersection

Teaching EFL in Iraq requires focus on improving learners' communication in English and constructing an interactive EFL learning environment. In this context, more attention must be given to speaking and communication activities. Drilling on grammatical structure, memorizing rules and vocabulary lists should be given less attention and weightage. Iraqi instructors have been found to follow traditional approaches that focus on translation, writing and reading, and to neglect speaking. Consequently, learners in such teacher-centered environments are deprived from real, active communication. In order to increase students' competency in the target language, the Iraqi EFL classroom needs to be changed in terms of its approaches from such an environment by considering the social constructivist theory which emphasises knowledge that is constructed in social interaction. Since the advance of technology, research on Second Life as a tool of CMC has revealed various advantages over traditional learning interaction.

Constructivists consider learning as a social and active process (Vygotsky, 1978). The most important aspect of the constructivist virtual learning environment is the authenticity of the learning environment. Learners in virtual learning environment have opportunities for conversation as a manner of learning. Therefore, Second Life environment supports constructivist learning on several aspects: 1) SL supports learners' knowledge development through the creation of public entities that

have meaning and significance for them; 2) SL permits the instructor's role to be blurred due to learners often developing more sophisticated SL skills than instructors after exploring SL; 3) SL is an open platform that supports wide interactions among its participants through negotiations, discussions and developed items. 4) SL offers support for setting open-ended problems that might be foiled by practicalities in real world (Wang, Burton & Falls, 2012).

In the Second Life environment, learners are presented with 3 dimensional objects and are sometimes "closer" than in real life. The authenticity of the experience qualifies learners to think critically, beyond abstract images or descriptions in text (Dickey, 2003). Furthermore, it offers a rich environment in which learners can strongly interact with one another and increase learners' motivations for language learning (Lee, 2009; Andreas et al, 2010).

What is Second Life?

Achieving common objectives such as interactivity, engagements, collaboration, and idea generation have been an ongoing challenge in the field of education. One particular technology that provides unique learning and teaching opportunities to achieve these objectives is the 3D virtual world which offers common space for users to interact and create an environment that is convenient for their needs (Eschenbrenner, Nah, & Siau, 2008). Dickey (2005) defined Virtual world as a computer-based online simulated environment in which users can move and interact with one another through tools of integrated voice chat, text chat, group chat and other ways of communication. Furthermore, Bell (2008, p.2) described a virtual world as "synchronous, persisted network of people, represented as avatars, facilitated by network computers".

Second Life (SL) is the most popular example of the last generation of 3D virtual world. SL is defined as an online synchronous three-dimensional virtual world (also referred to as a Multi-Users Virtual Environment, or MUVE) that has been developed by a San Francisco based Linden Lab, and was launched in 2003 to be available on the Internet. It invites users with the following statements "Enter a world with infinite possibilities and live a life without boundaries, guided only by your imagination" Linden Research, Inc., 2012 (as cited in Reinsmith-Jones, Kibbe, Crayton, Campbell, 2015, p.92). Linden Lab has generated Second Life platform filled with the objects, adventures and experiences of the individuals using Second Life. People enter SL for various purposes including, but not limited to meeting other people, working, educating and being educated and having fun along the way (Hundsberger, 2009).

The essential theme in SL is to create users or so-called "residents" through their own representatives - *avatars*. The avatars, much like in the real world, can do anything- buy their own land, build their houses, rent, go to work, go to dance, go to university, get married, and do various other activities on different islands. In other words, SL is a digital presence consisting of a multitude of islands which can be broken up, sold, purchased by avatars. The currency in SL is Linden \$, with an exchange rate of 1 US\$ equal approx.: 260 L\$. Thus, the environment within Second Life is an imitation of reality (Cheng, Zhan, & Tsai, 2010). Regarding communication, the avatars can communicate with others through traditional text chats or the use the more recent incorporation of voice chat (Carter & Elseth, 2009; Keskitalo, Pyykko, & Ruokamo, 2011). SL has also the ability to record actions that take place within SL. In this case, learners have the opportunity to assess and reflect on their personal performances and interactions with others by viewing their own recorded video clips in SL (Wang, Song, Xia, & Yan (2009). Therefore, instructors and researchers have another chance to formulate their learners' proficiency both from the linguistic and social communication perspectives.

Furthermore, SL allows students to create a persona (animals, human or something in between) and interact with others, who are in the same environment at the same time, and change their appearance through changing their clothing, hair colour, dresses within the environment (Inman, Wright, & Hartman, 2010). At the same time, these are not the only things that can be manipulated in SL audio or video clips. Power points presentations can also be uploaded into SL and attached to certain

objects. Note cards that contain any information that a teacher desires can be attached to any object in Second Life and recaptured with a click of the mouse. Additionally, words or phrases can be attached to objects as floating script, so the students do not have to click on an object to get a written version of its corresponding words (Carter & Elseth, 2009). Therefore, it helps learners to explore the lessons that they have learned, and help them to practice situations which may be inflexible in the traditional classroom. Currently, SL is being used by many educational institutions as a way to engage students in immersive educational environments. This crucial method of teaching in SL is a combination of theory and practice together with distinctiveness of environment (Carter & Elseth, 2009; Hundsberger, 2009).

In short, the interaction of activities using the SL virtual environment platform allows EFL learners to talk in English through personified virtual characters. Hence, it will encourage learning willingness and enhance interactive learning (Chung, 2012). Second Life is a very useful tool for language learners as it gives them the unique opportunity to use their language skills with other learners and native speakers. This is especially for learners who have a dearth of opportunities to use, hear, and practise English in real life. However, contact with native speakers not only allows students to practise oral skills and improve their pronunciation but also provides some cultural awareness (Wang et al., 2009).

Why Second Life?

One of the essential goals of education is to help students build their skills in both their preferred and less preferred areas of learning (Idrus, 2008). Thus, the most successful way to learn a second or foreign language is to participate in a community in which the target language is used to communicate in a real environment (Ibanez et al., 2011). The communication with other learners or native speakers of the target language has been recognized as an essential part of the learning process (Ellis, 1999). The advantage of conversation in authentic situations is invaluable to language learners (Krashen, 2003).

Therefore, SL has emerged as a platform learning in an educational setting due to its ability to create authentic learning conditions where learners can meet and hold authentic dialogues in a simulated environment, giving individuals a sense of 'being there' (Gaukrodger & Atkins, 2013).

In addition, Second Life can be utilized to make learning more interesting and attractive with the purpose of improving foreign language learning due to its immersive and interactive environment. According to Storey & Wolf (2010) and Hismanoglu (2012), Second Life is a very useful tool for foreign language learners because it gives them the unique opportunity to practise language with native speakers and non-native speakers of English from all over the world. Thus, it is possible to be an important learning tool in the education system due to its interactive and animated features. By interacting with the objects (avatars), learners have the meaningful opportunity to practice, observe their action and learn by doing (Mabrito, 2012; Abdelaziz, Riad, & Senousy, 2014).

Conclusion

This paper has introduced Second Life as a potential CMC environment for task-based EFL learning in the Iraqi teacher-centered environment. It focuses on Second Life in learning and teaching English as a foreign language which offer various advantages and benefits to learners and teachers. It is predicted that learners will progress and participate in interactive activities and engage in educational discourses that will improve the language learning process. Second Life is a unique opportunity for learners. It allows learners to interact with native speakers and other learners through avatars in the environment and can produce new experiences that may be difficult to present in the real life classrooms. It can foster synchronous interaction with teacher, students and other learners. It can also foster competency based on training like vocabulary, skills, and grammar similar to the use of computer assisted language learning devices. SL provides an effective learning environment for EFL

learners beyond the traditional learning environment. Teachers of English language can utilize SL in their teaching to supplement the traditional face-to-face learning.

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THE IMPLEMENTATION OF AN EDUCATION PORTAL INTERNET COURSE AS A CHANGE INITIATIVE: PERSPECTIVES OF STAFF IN OUM

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Abstract

The introduction of the education portal has created a learning environment which is learner-centered and facilitates ubiquitous communication among students. OUM developed the Education Portal Internet Course (EPiC) in response to the changes in the current practices for teaching and learning. EPiC embraces a blended approach where learning is possible through multi-mode strategies, face-to-face interactions, on-line forum discussion and self-managed learning. According to Taylor and Newton (2013), the implementation of blended learning is socially dynamic and institutional change will only occur if there is a shared vision among all members of the organization. As such, it is pertinent that both staff and students in OUM are savvy in technology and possess a good pedagogical knowledge in order to capitalize on the strengths of EPiC as an e-learning system. The purpose of this study is to investigate the effectiveness of the implementation of EPiC with the aim of improving on-line courses and students' engagement. The objectives of the study aim to examine: (a) the factors that contribute to the importance of EPiC, (b) the factors that contribute to the effectiveness of EPiC, (c) the factors for maintaining EPiC, and (d) the extent to which EPiC follows the regulations. The researchers used interviews to gather in-depth information from two participants involved with EPiC. Their responses to the interview questions were audio-taped and transcribed. The results indicated that the main importance of EPiC is saving time and enhancing self-management of learning skills. EPiC was found to be effective for submitting on-line assignments and the staff was helpful in solving technical-related issues. Although maintaining EPiC is costly, it has the potential for sustainability as a virtual learning platform for students. EPiC also observes ethical practices in e-learning such as using similarity checks for students' assignments. Future research should focus on improving the present system to provide more enhanced services to the stakeholders.

Introduction

The introduction of education portal has made it possible for the learning environment to be more learner-centered. Open University Malaysia (OUM) embraces a blended approach where learning is possible through multi-mode strategies, face-to-face interactions and learning through online forum discussion. In addition to the blended approach of teaching and learning OUM has designed and developed a education portal learning system named as Education Portal Internet Course (EPiC) as its change initiative to implement a hybridized fully online effective learning for its large number of students through the use EPiC (Widad, Meng & Shawira, 2014).

Educators however must be aware that the application of the educational portal does not guarantee effective learning. Educators need to be technologically savvy and possess good pedagogical knowledge in order to utilize the strengths of e-learning. The purpose of this paper is to discuss EPiC as the initiative change initiated in OUM and the authors' discussion will include: (a) the change initiative and its importance in OUM; (b) the implementation and effectiveness of the initiative; (c) the critical factors for the sustainability of the initiative; and (d) the ethical considerations used in the initiative.

Background of EPiC

In recent years the Ministry of Education has encouraged teachers especially those in primary schools to upgrade their qualification to a minimum of a degree. An issue that arises is the necessity of teachers to temporarily leave their jobs to attend the degree program in tertiary institutions. This challenge of a shortage of teachers is overcome by degree programs provided by on-line distance education. OUM has facilitated the initiative of MOE by offering the Bachelor of Teaching Program which provides learning via blended mode that included face-to-face facilitation, online forums and self-managed learning using the digital or print modules.

EPiC is a platform learning space created by OUM to provide an online learning environment for specially selected subjects, with the main objective of lessening the number of face-to-face classes that the learners have to go through. Currently, EPiC is set up to manage four online courses such as Co-Curriculum, Professional Practice, Professional Development and Inclusive Education. In addition, EPiC is created to provide the new virtual learning space required by Bahagian Pendidikan Guru (BPG) that needs to be integrated into the syllabus.

Purpose of the Study

EPiC is an online learning platform for sharing information and delivering constituent services to OUM students. The researchers are concerned with some persistent complaints on the EPiC platform. This problem has resulted in the following implications: (a) students assessment results are delayed; (b) students are not able to get their feedback in the forum; (c) students submission of assignment is overdue and they have to send them manually instead of using EPiC; and (d) the issue of plagiarism. This study was guided by the following research questions:

- (a) What are the factors that contribute to the importance of EPiC?
- (b) What are the factors that contribute to the effectiveness of EPiC?
- (c) What are the factors for maintaining EPiC?
- (d) What are the regulations adhered by EPiC?

Previous Studies

The importance of portal usage for tertiary education to deliver courses cannot be denied. Most research highlights the benefits of educational courses through internet portal platform in maximizing teaching and learning process. This section will discuss relevant research under the following sub-headings, (a) portal as online teaching and learning, (b) implementing and efficiency of education portal internet course in higher education, (c) faculty perceptions of on-line students' performance, (d) students' technological utilization skills in online learning, and (e) critical success factors in e-learning environment.

Portal as Online Teaching and Learning

The purpose of the developing of education portal in most higher education is for teaching and learning. When online learning was first introduced, many educators believed that it could never be as good as classroom learning environment. However, there are sufficient studies done that show students generally learn as much online as they do in traditional classroom environments. This view can be seen in a study done by Glen (2001), who compared the students' performance enrolled in an online graduate course with that of students taking the same course taught in a face-to-face classroom setting. They found that there is no significant difference between the two courses.

Implementation and Efficiency of Education Portal in Higher Education

It is also found that using technology to distribute courses online appears to be an efficient approach that has the potential to improve learner productivity and provide a student-centered instructional platform (Miller, Cohen & Beffa-Negrini, 2001). According to Taylor and Newton (2013) in their study which examined facilitators and barriers to systemic implementation of blended learning, teaching and learning environments are socially dynamic and strategic institutional change will only happen if there is a shared vision and energy that touches all parts of an organization.

Faculty Perceptions of On-line Students' Performance

Faculty members also contributed their perceptions of the effectiveness of on-line learning. Dobrin (1999), who found that 85 percent of the faculty teaching online courses felt that student learning outcomes were comparable to or better than those found in traditional classrooms. Nevertheless, there have been instances in which studies have reported significantly poorer learning in online courses as found in Chen, Lehman, and Armstrong's (1991) findings that online students scored lower than face-to-face students. The important indicator of course effectiveness is the extent to which students achieve the learning objectives (Johnson, Aragon, Shaik, & Palma-Rivas, 2000). In this respect, the effectiveness of online learning will depend on three distinct measures examined by Phipps and Merisotis, (1999) such as student outcomes, attitudes and overall satisfaction.

Students' Technological Utilization Skills in Online Learning

Kuo, Song, Smith and Franklin (2007), in their study found that students' technological application skill levels for both online and traditional classes increased by about a factor of two on the post-test as compared to the pre-test. First, students' life blended with technology leads to development of positive attitudes toward technology. Second, online pedagogy must be well designed to cater for the content and needs of learners. Third, technology is a medium readily available for students to communicate with facilitators and peers with immediate feedback. Technology also provides opportunities for active on-line learning in accordance to individual needs.

Critical Success Factors in E-learning Environments

Watty (2003) highlighted that there are different ways of conceptualizing quality in the context of tertiary education. Hybrid learning occurs in a wide range of teaching activities where technology in one form or another is involved. Hence, to create an effective open, flexible, and distributed learning environment for diverse learners, we must explore key factors encompassing various dimensions of e-learning environment (Khan, 2005).

Oliver (2001) addresses the major issues confronting the successful adoption and sustained use of e-learning. The factors in quality e-learning programs include: (a) teacher expertise in online teaching; (b) student readiness to move online; and (c) provision of content and learning resources. In an attempt to provide a pedagogical foundation as a prerequisite for successful e-learning implementation, Govindasamy (2002) discussed seven e-learning critical factors namely, institutional support, course development, teaching and learning course structure, student support, faculty support and evaluation and assessment.

Methodology

This qualitative study employs a case study method utilizing interviews to collect data. This study was conducted in a private distance education university. The participants in this study were the EPiC creator, and one staff member. The instruments employed for this study were semi-structured interviews considered appropriate to collect in-depth information from the participants.

The interviews were conducted for 15 minutes and participants' responses were audio taped and transcribed. The participants signed a letter of agreement to participate voluntarily with a choice to withdraw at any point during the interview. Confidentiality of information was assured. A summary of the interview was provided to each participant to ensure the authenticity of information provided. The data collected from the participants for the interview were categorized into early coding themes according to the participants' responses for possible suggestions to the current problems.

Results

The results are presented in accordance to the the responses of the EPiC Creator and the staff member. The following are the excerpts of the responses from both participants.

EPiC Creator

Factors Contributing to the Importance of EPiC

The EPiC Creator indicated that the main contributing factor to the importance of EPiC in OUM is to save time for students' learning. Students will be liberated from physical time via virtual platform. EPiC Creator mentioned the factors contributing to the importance of EPiC:

"The whole idea of creating EPiC is to save time for student as well as to extend their learning time because their physical learning time is already very packed. So when you put everything online they liberated from physical time. So we actually extending the time on the virtual platform ..."

Factors that contribute to the effectiveness of EPiC

All the tasks pertaining to assignments for the platform is done by the faculty and system is continuously monitored by EPiC Creator. EPiC Creator seems to observe the importance of collaborative work with the faculty and help to make the system runs smoothly. The EPiC Creator indicated factors contributing to the effectiveness of EPiC as follows:

" ... Mmm... if you are talking about the system ... yes ... if they have.. facing the problem they will tell me.. if they have problem with the content of learning material then they will go the respective coordinators like cocurriculum that one's coordinator I don't know who and then they have different subjects for then they will go to other coordinators but if they have a problem with the system, we seat together and what happen is we look back at the system and review the system if there any... thing we need to be improve or any... thing that we need to redo so we do to time to time seat down and talk about the system or some complaint from student may be the button is not working or staff like that... We do enhancement from time to time ..."

Factors for Maintaining of EPiC

Continuous improvement is essential in order to maintain the EPiC system in reference to the large number of students that use EPiC platform. The monitoring of the system from time to time is very essential. The EPiC Creator indicated factors for maintaining of EPiC:

" ... for system of course when we created or we test it up we... we... of course think the system is good but the problem is we cannot test everything so it always usual it normal for system to be roll out and then tested by users and then do enhancement and the cycle goes on and on until the system is stable so right now EPiC is stable for the use ... current use I think right now we have more than about 10 thousand in the system..."

The EPiC Creator further mentioned that factors for maintaining EPiC system is the know how usage of the system by: (a) coordinators; (b) EOS; and (c) students.

“... I think another way to make sure that the system work well is to make sure the coordinators ... the EOS ... and the student know how to use the system. They familiar to the system.. but I think they have manual online that can click and they go through ...”

The Extent to Which EPiC Follows the Regulations

The EPiC Creator mentioned that the EPiC does follow regulations to avoid legal issues. EPiC creator noticed that OUM emphasize on this matter seriously. He indicated the extent to which EPiC follows regulations in the example from excerpt of the interview:

“... at this point we try to adhere to all regulation to avoid any legal issues. As far as I am concerned the faculty is very serious about plagiarism, copyrighted issues, etc. EPiC is our propriety. Students and EOS can access EPiC without any problems ...” (EC L61-63)

Staff Member

Factors Contributing to the Importance of EPiC

The main contributing factor to the importance of EPiC in OUM is to overcome the constraints faced by students to undergo four additional courses required by BPG which can only be accomplished fully online. The course materials related to the subjects can be easily viewed once students log into the system and students can develop self-manage learning skills. Further the staff member indicated this return for investment for education is cost effective.

The factors that contribute to the importance of EPiC are:

“... directive order from BPG. Students have to add four more courses to consolidate the credit. There was no other choice ... so OUM has to develop EPiC. If not it is going to be difficult for OUM to manage so many students with EPiC it is cost effective for OUM and can access EPiC at all time time and place; Teachers do not have to attend more classes ... they can learn at home or in school ...”

The EPiC EOS develops a high commitment in teaching students on the proper use of EPiC system. As a private institution this will encourage more students to engage in EPiC for this programme especially for students who are working as teachers. Example from the excerpt of the interview: “... Many student may enter this program within the time frame ...”

Factors that Contribute to the Effectiveness of EPiC

The factors contributing to the effectiveness of EPiC are:

“... Firstly the EPiC coordinator must always monitor EPiC implementation. After that ... we have meeting from time to time. Like once a month ... We have specefic schedule that we need to follow properly. Assignment must be uploaded and follow the time. Mmm ... when the time has arrived we have to distribute the marks to EOS and mark them according to the schedule. Result has to be out immediately ... if not it is going to be difficult ... if not students will get angry ...”

Factors for Maintaining of EPiC

The institution needs to closely monitor the EPiC system. The tasks for EPiC are related to: (a) preparation and uploading and course materials of EPiC, and (b) persistently sending reminders to students and EOS through short messages service or sms. Participant A indicated these suggestions in the example from excerpt of the interview: *“... sending reminders to them for examples ... through sms to students ... and to EOS as well ... otherwise they will not participate ...”*

Students need to improve certain attitudes in using EPiC. The institutions need to make clear to students that they need to submit online assignment on time or much earlier than the due date. Students continuously were reminded and need to be more creative in problem solving when faced with difficulties in submitting online assignment. For example, students can use the YouTube link to submit audio-video assignment. The staff member added *“... students are advised to submit assignment earlier from the due date to avoid problem like this.”*

When faced with technical issues he managed his task by obtaining support from Group Information and Communication Technology Services (GICTS) team. He has to work closely with GICTS support team. He overcomes technical problems by *“referring to GICTS to solve them. We are the middle people, so we refer to GICTS and after they solve the problems we inform the students ...”*

To What Extent the Regulations Adhered by EPiC

Students' assignment are scrutinized through similarity check mechanism. Students who are teaching in the remote areas will be given different sets of questions manually by OUM and submits online during their face-to-face session during their holiday time. He indicated the extent the regulations adhered by EPiC in the following interview excerpt:

“... They cannot copy another student's work because there similarity check. If the faculty know certainly it would difficult later. That's it ... Their assignment is sent manually by the faculty and quite their questions are different questions from students in the city ... mmm ... as for the blind students we prepare tapes for their assignments and they can access. They can use Braille to answer questions. Student assignment is moderated in advance by the faculty ... their assignment is different than the others. They can send it online during school holiday time when they come out from remote schools for their face-to-face session in LC that they go ... Mmm ...”

He further indicated that students who are blind work collaboratively with friends who can assist them in retrieval of the assignments and assist them to read for them the assignments. They can also write their assignment using braille. Participant A indicated in the interview excerpt: *“Mmm... kawan mereka digalakkan untuk membantu mereka download ...errr ... mereka yang tak dapat melihat kawan bacakan ... dan bantu merenalah...”*

Discussion

The EPiC Creator and staff member agreed that that the main contributing factor to the importance of EPiC in OUM is that it save time for students who can extend their learning anytime, anywhere and any place. With EPiC students can fulfill more courses stipulated by BPG which can only be accomplished fully through online learning. The electronic modules for these courses can be easily be viewed or downloaded once students registered for the courses. There are not many technical issues related to the utilization of EPiC in OUM. Technical problems usually occur whenever students send the assignment at the last minute, causing the EPiC server to become slow and congested

The institutional management of EPiC needs to be improved for the system to function effectively. Both participants have the positive attitude in using EPiC. The institutions need to play a more proactive role to allow the staff and students to fully benefit from the EPiC system and thus continuous improvement is essential to ensure it is maintained continuously. Etiquette practices in EPiC such as cultural diversity, geographical diversity, learner diversity (disabled students) are also observed. OUM also made sure that students follow the guidelines provided in order to observe the ethical practices especially in similarity checks for assignments.

Conclusion

The effective implementation and its effectiveness of EPiC is beneficial to its creator, staff and students. There are undeniably technical related issues that require institutional attention in order to maintain and sustain the application of EPiC. Presently the staff has indicated the ability and willingness to solve the issues in order to make it more efficient and user friendly. Students' feedback on EPiC has been positive.

Faculty staffs have also found out that additional advantage to the online format has given them some flexibility. Ethical factors in the implementation of EPiC have been observed and practiced which includes plagiarism, geographical and student's diversity (special need students). OUM also ensures that students are ready for online learning by providing them compulsory courses related and assistance continuously.

An important outcome of this study is the knowledge gain about the employment of EPiC in teaching and learning in the institution. Future research should focus on improving the present EPiC system and to enhancement to provide a more effective service to the stake holders (institution, students, facilitators etc.). Participants will greatly benefit from an improvement EPiC system which will in turn enhance teaching and learning process as well as assessment educational development.

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PERCEIVED COMMUNAL BENEFITS, CONCEIVABLE RISKS AND POTENTIAL IMPLICATIONS: OPINION OF E-EDUCATORS ABOUT SOCIAL SECTOR IMPLICATIONS OF E-LEARNING IN PAKISTAN

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Abstract

Modern revolution of information technology has drastically changed the landscape of education around the globe. In developed as well as in developing countries, use of Information Communication Technologies (ICTs) is being implemented to achieve the goals of education for all. In this regard, E-learning has been doing wonders for more than two decades in every walk of life. Though West has explored it in its maximum extents, we “the people” living in South Asian region still need to come up with new implications of e-learning in social sector. Keeping in mind the context, present study aims at exploring the social sector implications of e-learning in Pakistan. This study finds out the communal benefits, conceivable risks and potential implications of e-learning in social sector in Pakistan. Methodology adopted for current research is quantitative; a 4 point Likert scale (Chronbach Alpha= .76) is administered through web-survey to know the social implications of ICTs from e-educators perspective. Sample includes the e-educators (80) of one public sector University and one private sector University having at least five years of e-teaching experience. For analysis purpose, descriptive statistics and independent sample t-test is used. The results of the study reveal that e-learning is perceived very important tool in order to develop social networks around the world. Digital divide, increase in cybercrimes, initiation of new type of ideological wars and racial and ethnic promotions are identified conceivable risks by respondents. This study by focusing on the social sector implications of e-learning in all fields of life in developing countries like Pakistan opens a discussion for social and educational planners to adopt e-learning as a medium to achieve social sector development goals.

Keywords: *E-learning, social sector, e-educators, social implications*

Introduction

E-learning is nowadays a buzzword for higher education institutes around the globe. Few consider it as a fashion to talk about while others seriously take it as an interactive tool to implement in learning practices. In later case, it is being used as an important device for learning (Nawaz & Kundi, 2010) and searched with a perspective of communal use through higher education as well (Tinio, 2002). E-learning is not restricted to the concept of education and learning, it has also extended towards non-educational conceptions such as political, cultural, social and economic (Sife et al., 2007).

The studies on integration of educational technologies has developed a caveat that ICT based tutoring is an important tool to intervene in developing countries as per their contextual needs (Ezer, 2006; Baumeister, 2006; Stephenson, 2006; Hameed, 2007). However, the construct context is important to identify and operationalize as it covers multivariate angels i.e. culture, development, community welfare and capacity building etc. But it is even more important to identify and correlate this context with ICT based education (Nyvang, 2003). This correlation either can be positive or negative but the way e-learning is implemented will determine possible results (Sasseville, 2004).

But at the same time potential implementation of e-learning in developing countries has to address the challenges such as governance, infrastructure, economic and educational system problems themselves. In this regard, many developing countries are initiating human capital initiatives with a strategic framework so that social inclusion, girls’ education, health issues and up-gradation of education system can be improved and ensured (Olson urt deMaagd, Tarkleson, Yook, & Egidio, 2011).

A number of fields/areas are there to explore such as e-commerce/business, women empowerment, health education, secondary and primary education, vocational training etc. For instance, efficiency and effectiveness of ICT can be examined in economic activities like E-commerce i.e. an efficient market place. This mode of business strings up new and closer relationships between customers, firms and organizations. (Coppel, 2000). Friedman (2005) in his book *The World is Flat*, argues that expansion of business and distribution of goods and services for anyone are the outcomes of interaction between people and it is result of active involvement of ICTs in business sector. Interrelationship between education sector and industry is required in this regard. A caveat has been developed by social researchers that in changing world scenario role of higher education are getting crucial in context of social and economic development. Subsequently, skill development along with employability should be focus of education in future. There are several direct and indirect influences online universities can exert at community level as its scope can be extended to the economic development of the specific region (Lester, 2006), role of ICT based education in this regard is not negligible.

Similarly, ICT based education /e-learning potential role is remarkable in eliminating gender disparity as supported by Anand (2002) and Gurumurthy (2004). Nath (2001) reported that large number of women is employed in big organizations having basic knowledge of information technology. It is supporting women all over the world by giving opportunities for employment. Moreover, majority is also successful to have opportunities to get home base employment such as data entry and software skills jobs.

ICTs sector has been expanding steadily. It facilitates individuals into groups and develops socio-political and democratic growth to facilitate good governance (Mercer, 2004). For efficient public participation in the democratic process ICTs provide new tools in the form of e-democracy and e-voting. Brinkerhoff (2005) stated that the ICT enables the freedom of speech, individualism, and liberal values. Further, Ferdinand (2000) reported that ICTs is mechanism of world-wide democratization. It legitimated the rapid democratization in regions of the world.

Diffusion of ICTs in education sector consequently creates productivity gains, distinctiveness of jobs, business activities and professions. Due to ICTs revolution, structures of labor market and firms have also been changed. The instrumentality of ICTs can also be observed in wide-reaching economic incorporation via electronic trade and business activities into the global market (Zembylas & Vrasidas, 2005; Pohjola, 2001; Norris, 2000; Keohane and Nye, 2000).

In education sector in developing countries specifically e-learning is a successful alternative tool to deliver education. These countries have limited access to resources to provide education for all and in such situations e-learning serve the purpose by providing alternative source of getting education without geographical boundaries. Students in these countries have been provided with the opportunity to access education at low cost and as per their ease (Naidu, 2006). In order to overcome the issue of social marginalization, use of e-learning is an important strategic tool to work with pro-poor development strategies. E-learning modalities by recent use of ICT have also increased the possibility of catering the issue of capacity building of marginalized groups in developing countries (UNESCO, 2004). Purposefulness of education in e-learning system is highlighted at various platforms, in this scenario in developing countries of Africa Project Identification Report 2013 suggested to improve capacity building in terms of research and inquiry and emphasized on enhancing decision making skills of students' learning in e-learning institutes (Southern African Development Community).

E-learning proves to be a successful experience in developing countries like Pakistan where this initiative was taken in year 2002 by Virtual University of Pakistan and in short span of time the pioneer institute successfully crossed the enrollment more than 10,000 and offering a variety of program in biological sciences, computer sciences, management sciences, social sciences, arts and humanities. As far as success of these programs is concerned, it shows that majority graduates have successfully get employment and working in their professional capacity in renowned organizations

(Din & Jabeen, 2014). But this is not enough in context of developing world. E-learning needs to explore new avenues and accept new challenges to find out the maximum benefit of ICT.

In Pakistan e-learning has successfully played a significant role to bring marginalized and unprivileged people in mainstream education and has been successful as a learning mode but at the same time this successful ICT based education has given rise to different challenges for e-educators (Jabeen, Din, & Sadiq, 2012). The most important among them is social sector development in developing countries like Pakistan. Though e-education has made access to higher education possible but its implication in other social sector such as health, gender, disparity, social exclusion is still questionable. Keeping in mind the question of social sector implications e-learning this paper intends to quantify the E-educators perspective regarding ICTs and its Social implications. This study aims to find out the communal benefits, conceivable risks and potential implications of e-learning in social sector in Pakistan. In this regard, both, public and private sector educators are approached.

Objectives of the Study

The main objectives of the study are to:

- Find out the perceived communal benefits of e-learning in Pakistan
- Discover the conceivable risks that may lead towards adverse social implications of e-learning
- Explore the e-educators' perspective regarding potential implications of e-learning in Pakistan
- Determine is there any difference between opinion of e-educators in public and private organizations regarding communal benefits, conceivable risks and potential implications of e-learning in Pakistan

Scope of the Study

This study is based on the opinion of e-educators working in public and private sector universities in Pakistan. E-educators of both types of organizations are selected for current research as they are well familiar and equipped with ICT skills and they better understand the scope of e-learning in changing world and the way it can be used for social sector development.

Method and Procedure

The study is descriptive in nature. Methodology adopted for current research is quantitative; A 4 point Likert scale (Chronbach Alpha= .76) is administered through web-survey to know the social implications of ICTs from e-educators perspective. Sample includes the e-educators (80) of one Public Sector University and one private sector university having at least five years of e-teaching experience. As the purpose of current paper was to explore e-educators' perceptive regarding the social implications of ICT so, those educators were approached who were involved in teaching the courses through online learning method. Questionnaires were shared with the faculty members through online link via e-mail and response rate remain 62%. The tool for data collection was taken from Okoye (2012) study on Social Implications of ICT. 4 point Likert scale i.e. Strongly Agree 4, Agree 3, Disagree 2 and Strongly disagree 1. was used. Chronbach Alpha of the scale was 0.76. In order to analyze the data, descriptive statistics were used and researcher followed the criteria used in Okoye (2012) study in which mean value of 2.50 was considered as favorable and means scores less than 2.5 were considered as unfavorable. Descriptive statistics and independent sample t-test were used to find out the difference between opinion of e-educators in public and private sector organizations.

Results

Data was obtained from 80 e-educators, 40 working in public sector organization and 40 in private sector organization. Out of total 80 respondents 33 were male and 47 were females. The age range of respondents was 24-50 and means age was 30 years.

Table 1: Descriptive Statistics Showing Perceived Communal Benefits of E-learning in Pakistan

Perceived communal benefits of e-learning	Mean values
E-learning facilitate quest for recent information	3.26
E-learning foster inquisitiveness	3.11
E-learning serve as a search engine for employment	3.28
E-learning facilitates the communication process	2.73
E-learning is an essential for research purposes	3.46
E-learning help to foster creativity among youth	3.23

Data in Table 1 explains the perception of e-educators teaching in public and private sector regarding the perceived communal benefits of e-learning. Total six dimensions were asked to rate on likert scale by e-educators. Responses of the teachers narrate the highly favorable results on the variable of quest for latest information, search engine for employment, essential use of e-learning for research purpose and inquisitiveness among youth. Only in one dimension that relates to the improvement in communication process responses give little unfavorable result whereas on rest of dimensions mean value more than 3 shows good response from the respondents.

Table 2: Descriptive Statistics Showing Conceivable Risks that May Lead Towards Adverse Social Implications of E-learning

Conceivable risks of E-learning	Mean values
E-learning is a supportive tool of cultural neo-colonialism	3.03
E-learning has created the digital divide	3.58
E-learning has open up the new ways for breakdown of law and order	2.68
E-learning has caused ideological war between nations	2.88
E-learning promote racism and ethnicity	1.55
E-learning induce mass unemployment in developing countries	1.53

Table 2 deals with the reported conceivable risks of use of e-learning in Pakistan. Results of the respondents for both types of organizations show that e-educators perceive ICT based education as potential risk for new type of colonization, digital division in developing world, opening of debate on cultural war and an anticipated tool to facilitate cybercrimes. E-learning as an instrument of mass unemployment and increasing race and ethnicity was not favored by the respondents indicating means value of $M = 1.55$, $M = 1.53$ respectively.

Table 3: Descriptive Statistics Showing Potential Implications of E-learning in Pakistan

Indicators of Potential social Implications	Mean value
ICTs (Internet) expand existing social networks	3.41
ICTs promote social exclusion	2.64
ICTs promote social justice	2.04
ICTs induce poverty alleviation	2.26
ICTs facilitate women empowerment	3.30
ICTs provide employment in developed countries	3.19
ICTs facilitate social development in developing countries	2.98
ICTs influence cultural pollution	3.14
ICTs foster social inclusion	2.55
ICTs help out to reduce illiteracy	2.94
ICTs can serve as a motivational tool to reduce gender disparity	2.69
ICTs facilitate social transformation	3.09

Table 3 represents the indicators of potential social implications of e-learning in Pakistan. Data shows a mixed result regarding social implications. The major areas where potential social implication is identified are expansion of social networks ($M = 3.41$), women empowerment ($M = 3.30$), employment provision ($M = 3.19$), and social transformation (3.09). And the areas in which e-educators perceive e-learning less suitable for social sector development are social justice ($M = 2.04$) and poverty alleviation ($M = 2.26$).

Table 4: Independent Sample t-test on Perceived Communal Benefits

Hypothesis: It was hypothesized that there would be significance mean difference in opinion of e-educators in public and private sector organizations regarding perceived Communal benefits of e-learning.

Mean, SD, t and p value of E-educators in public and private organizations on Communal benefits

	Organization	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i> <
Communal benefits	Public	17.93	2.34	-2.900	.005
	Private	19.60	2.79		

Note: ** $p < 0.05$

This hypothesis was tested by using Independent Sample t-test, type of organization was taken as independent variable and perceived communal benefits of e-learning was taken as dependent variable. Table 4 shows that there is not a significant difference between the opinion of public and private institutes e-educators regarding perceived communal benefits of e-learning. It indicates that e-educators in public educational institutes are not significantly different from private educational institutes' educators in their opinion towards e-learning and its perceived public welfare.

Table 5: Independent Sample t-test on Conceivable Risks of e-Learning

Hypothesis: It was hypothesized that there would be significance mean difference in opinion of e-educators in public and private sector organizations regarding conceivable risks of e-learning.

Mean, SD, t and p value of E-educators in public and private organizations on conceivable risks of E-learning

	Organization	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i> <
Conceivable risks	Public	15.73	2.14	1.106	.272
	Private	15.23	1.88		

Note: * $p < 0.05$

This hypothesis was tested by using Independent Sample t-test, type of organization was taken as independent variable and perceived conceivable risks of e-learning was taken as dependent variable. The independent sample t-test was carried out to see the significant mean difference between two different types of e-learning institutes i.e. public and private (table 2). Results showed that there is a significant difference between both types of organizations which was clearly visible in the mean scores as well. Levine's test is significant so equal variance was assumed that reflects both groups do not vary equally. Cohen's d was calculated and the value is 0.6 which is moderate and reflects medium level difference between the two groups (Ellis, 2009).

Table 6: Independent Sample t-test on Potential Implications of E-learning

Hypothesis: It was hypothesized that there would be significance mean difference in opinion of e-educators in public and private sector organizations regarding potential implications of e-learning.

Mean, SD, t and p value of E-educators in public and private organizations on potential implications of E-learning

	Organization	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i> <
Potential Implications	Public	37.13	3.34	-.994	.323
	Private	37.85	3.17		

Note: * $p < 0.05$

This hypothesis was tested by using Independent Sample t-test, type of organization was taken as independent variable and potential implications of e-learning was taken as dependent variable. Table shows that there is not a significant difference between the opinion of public and private institutes' e-educators regarding potential implications of e-learning in Pakistan. It indicates that teachers in both types of institutes anticipate same areas of e-learning useful for social sector implications such as women empowerment, employment provision, social transformation etc.

Discussion and Conclusion

In changing educational scenario role of e-learning is getting dynamic. It has now been associated with various dimensions covering from students learning to employability, capacity building, community development and socio-economic development. Such versatility is derived and ascertained through many type of indigenous experiments held by different institutes in different regions and countries. The approaches towards use of e-learning vary as per the context of each country. In each and every situation role, barriers, opportunities and challenges faced by e-learning is discussed bevarious researchers with different domains. This study also documents a new dimension of e-learning i.e. social sector implications that is considered as a challenge too.

As this study was conducted to find out the communal benefits, conceivable risks and potential implications of e-learning, the results show that e-learning is considered an explorative tool in the entire sector. It is also associated with the fast growing communication process that has broken the barrier of access and every type of information is now at door step of the learners. In the realm of globalization, it provides proper way to inquisitiveness. Further, its role can be seen with reference to extended e-communities and social networking which ultimately expand the social capital of friends and social grids.

Moreover, this study explores that e-learning has also been perceived beneficial in order to search employment opportunities, information sharing, business development, women empowerment and poverty alleviation by including a large group of marginalized people in mainstream economy. The most distinct function identified by respondents regarding favorable social implications of e-learning is facilitation in research process. Research is inevitable part of all social sectors development, ICTs through education throw its valuable contribution has facilitated this process in many ways such as exploration of information, social statistics, demographic and geographical data as well as cultural variations.

Though, most of the uses of e-learning are perceived productive but there are certain areas which restrict its use and potential implications that lead to certain risks as well. Respondents of this study show their opinion negatively towards E-learning in context of ne-colonialism. Nevertheless, that E-learning has overcome the issue of geographic boundaries but at the same time it has created risks for individuality and cultural identity of the consumers. Respondents also reports that they conceive digital divide another risk associated with e-learning.

With reference to the potential implications of e-learning, The areas which are observed as positive enhancement in literacy, social transformation of knowledge and skills, catering the issue of mass unemployment and social inclusion of individuals in all the sectors. Few areas are found less effective to bring social reforms and in this regard respondents identified poverty, social justice and social development unattainable.

An important objective of the study was to see whether difference exist or not in the opinion of public and private sector employees regarding e-learning usability, risks and potential implications. Independent sample t-test was carried out to measure the results and it was found the respondents in two different groups see benefits and implications in same manner. The only difference was found (moderate level) with reference to conceivable risks. One of the reasons could be that in public sector sometimes institutional policies restricts the scope of innovation as compared to private sector organizations where innovative experiments are usually encouraged and supported by leadership. As the concept of e-learning is changing from access to employability and development in developing countries so its potential implications in multiple sectors other than education is also anticipated (Heeks, 2002; Rajesh, 2003). In developing countries like Pakistan its prospective usability is important to measure as poor socio-economic indicators indicate the dire need to intrude some innovative method to introduce for community development as well as social welfare. The perceived benefits have large scale implication for social and economic development of the country. It can be concluded as well that in future e-learning can serve to tap those areas as well which appears impossible at the moment as identified in results.

Study Implications

This study by focusing on the social sector implications of e-learning in all fields of life in developing countries like Pakistan opens a discussion for social and educational planners to adopt e-learning as a medium to achieve social sector development. Further, it has initiated a debate to find out the possible solution of dark side of ICTs. Perceived positive social implications as explored by this study have further supported the fact that e-learning is the possible solution to change the plight of developing word. In this regard, it is suggested that it must be used for the service of humanity.

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OPINIONS OF THE UNIVERSITY STUDENTS TOWARDS TWO LEARNING OBJECT MODULES (LOM) ON GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELING OF CHEMICALS (GHS) AND CHEMICAL SAFETY

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Abstract

Most of Thai people, particularly, consumers still have health risk from dangerous chemicals. One of the guidelines to prevent and reduce the risk is to promote awareness on chemical safety among Thai children and adolescents. This target groups are potentially important human resources. Additionally, chemicals are extremely used in various occupations of agriculture, industry, and community enterprises. Therefore, the Office of Food and Drug Administration (FDA), Thailand collaborated with School of Health Science, Sukhothai Thammathirat Open University (STOU) for developing on-line Learning Object Material (LOM). The objective of this research was to study opinions of the University Students towards 2 LOMs on Globally Harmonized System of Classification and Labeling of Chemicals (GHS) (LOM 1) and Chemical Safety (LOM 2). This research supported by FDA (Thailand) was conducted by compiling and analyzing all needed contents for 2 LOMs from reference resources of relevant documents, GHS manual, and internet in order to develop as learning content. The contents were first designed as 2 storyboards for 2 LOMs on 1) GHS and 2) Chemical Safety. The storyboards were then submitted to International Program on Chemical Safety (IPCS), FDA, Ministry of Public Health for consideration and suggestions. The revised storyboards were further revised and sent to E-Learning Center of STOU for developing LOMs with Adobe Flash cs6 Program. Moreover, the LOMs were resubmitted to IPCS for consideration and suggestions. The LOMs were further revised before practical trying-out on-line with 53 B.Sc. (Occupational Health and Safety) students and 44 M.Sc. (Industrial Environmental Management), respectively. The research findings were that most of the students had previous knowledge in LOMs, satisfaction of LOM presentation, understanding, presentation sequence, and making use of LOMs at the high level. These two LOMs has then been displaying on School's and STOU's websites and FDA would co-ordinate with Inter University Network (UniNet) of the Commission of Higher Education in order to disseminate the LOMs to central and regional universities in Thailand.

Keywords: Learning object modules, University student, Globally Harmonized System of Classification and Labeling of Chemicals, Chemical safety

Introduction

The United Nations had developed Globally Harmonized System of Classification and Labeling of Chemicals (GHS) in 2003 due to various chemical management systems. It is crucial to harmonize them within the same standard in chemical classification with regards of physical, health, and environmental hazards. Then, hazard communication should be done to targets groups of workers, transporters, emergency responders, and consumers through labels and safety data sheet (SDS).

Thailand has voluntarily accepted GHS and mandatory used in industrial sector with collaboration of relevant offices including Ministry of Industry, Ministry of Agriculture and Co-Operatives, and Ministry of Public Health since 13 March 2012. The main objective was to make hazard communication to the mentioned targets. Most of Thai people, particularly, consumers still have health risk from dangerous chemicals. One of the guidelines to prevent and reduce the risk is to promote awareness on chemical safety among Thai children and adolescents. These target groups are potentially important human resources in order to survive safely in current situation of daily uses of chemicals and chemical-based products. Additionally, chemicals are extremely used in various

occupations of agriculture, industry, and community enterprises. Preparedness of coping with environmental pollution or accidents incurred from chemical problems is a significant issue.

The National Strategic Plan on Chemical Management IV (2012-2021) of Thailand pays attention to challenge topic of human development to have knowledge for chemical safety management through educational institutes which are crucial partnership. The Office of Food and Drug Administration (FDA) as the Secretariat of the Plan had been conducting projects of knowledge and life skill development among the youth on chemical safety with collaboration of the Office of Basic Educational Commission in order to develop instruments for learning process in primary and secondary schools.

In order to extent the aforementioned projects, FDA collaborated with School of Health Science, Sukhothai Thammathirat Open University (STOU) for developing Learning Object Material (LOM) on GHS and Chemical Safety for the students in B.Sc.(Occupational Health and Safety) and M.Sc. (Industrial Environmental Management). These students would be officers in industrial sector handling with chemicals Those LOMs would be developing potential for these students in classification. and labelling of chemicals based on GHS as well as basic knowledge and skill in chemical safety management.

Objectives

To study the opinion of the students in B.Sc.(Occupational Health and Safety) and M.Sc. (Industrial Environmental Management) towards Learning Object Modules on GHS and Chemical Safety

Literature Review

Globally Harmonized System of Classification and Labeling of Chemicals (GHS) is an international system created by the United Nations. It is designed to replace the various classification and labeling standards used in different countries by using consistent criteria for classification and labeling on a global level. GHS classification system is a complex system comprising 3 hazards of physical, health, and environmental hazards with data obtained from tests, literature, and practical experience The main elements of the hazard classification criteria are summarized below:

Physical hazards include 1) Explosives; 2) Flammable gas; 3) Flammable aerosols; 4) Oxidizing gases; 5) Gases under pressure; 6) Flammable liquid; 7) Flammable solid; 8) Self-reactive substances; 9) Pyrophoric liquid; 10) Pyrophoric solid; 11) Self-heating substances; 12) Substances which on contact with water emit flammable gases; 13) Oxidizing liquids; 14) Oxidizing solids; 15) Organic peroxides; and 16) Substances corrosive to metal.

Health hazards include: 1) Acute toxicity; 2) Skin corrosion/ irritation; 3) Serious eye damage/eye irritation; 4) Respiratory/skin sensitizer; 5) Germ cell mutagenicity; 6) Carcinogenicity; 7) Reproductive toxicity; 8) Specific target organ toxicity (STOT) single exposure; 9) Specific target organ toxicity (STOT repeated exposure; and 10) Aspiration hazard.

Environmental hazards include: 1) Hazardous to the Aquatic Environment and 2) Hazardous to the ozone layer

After the substance or mixture has been classified according to GHS criteria, the hazards need to be communicated. The communication methods incorporated in GHS include labels and safety data sheet (SDS). GHS attempts to standardize hazard communication so that the intended target groups (worker, transporter, emergency responder, and consumer) have better understand the hazards of the chemicals while handling. GHS application of the hazard communication elements on the label with pictogram, signal word, and hazard statement should be used. National authorities may choose to

specify where information should appear on the label or allow supplier discretion. Pictograms have a black symbol on a white background with a red diamond frame.



Signal words ("Danger" or "Warning") are used to emphasize hazards and indicate the relative level of severity of the hazard, assigned to a GHS hazard class and category. Some lower level hazard categories do not use signal words. Only one signal word corresponding to the class of the most severe hazard should be used on a label. Hazard statements are standard phrases assigned to a hazard class and category that describe the nature of the hazard. An appropriate statement for each GHS hazard should be included on the label for products possessing more than one hazard.

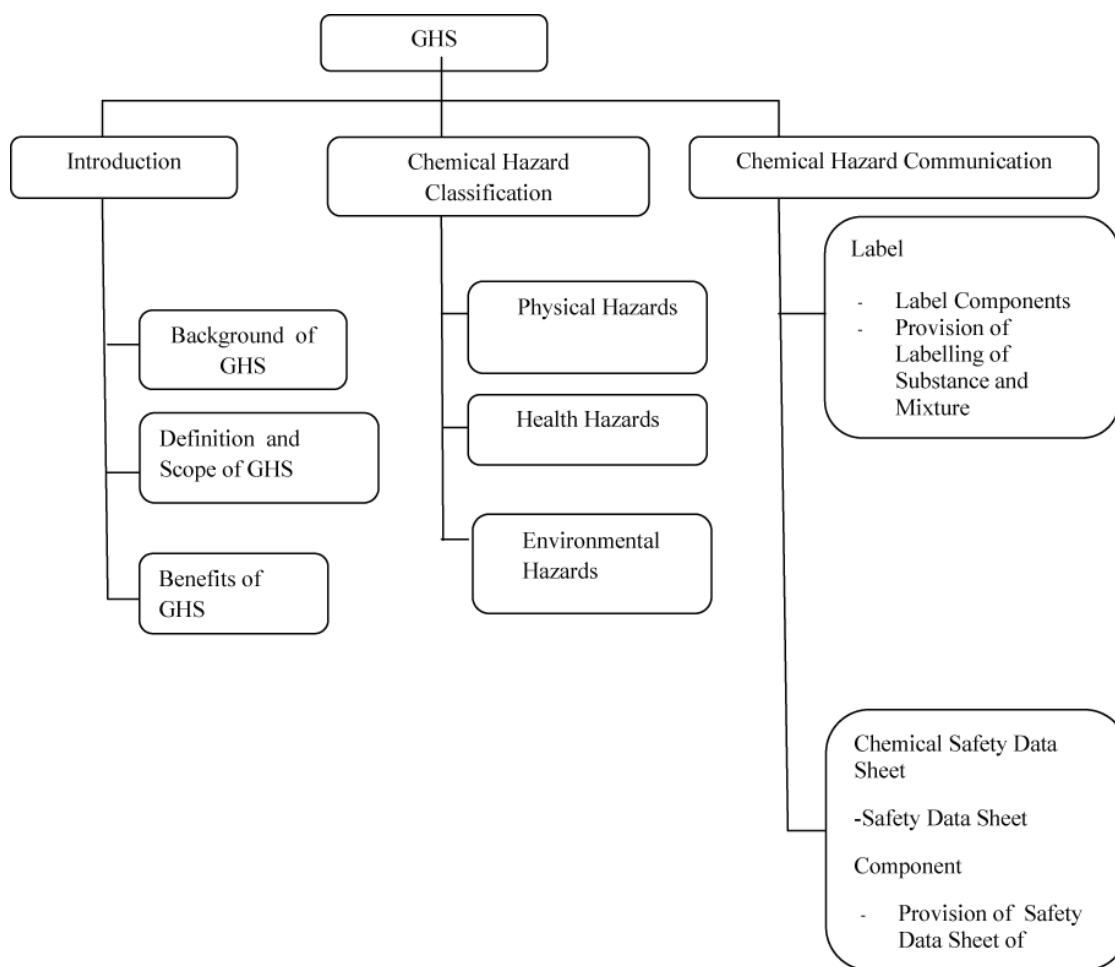
The adoption of the GHS is expected to facilitate international trade by increasing consistency between the laws in different countries that currently have different hazard communication requirements. Different countries require different time frames to update current regulations or implement new ones.

Methodology

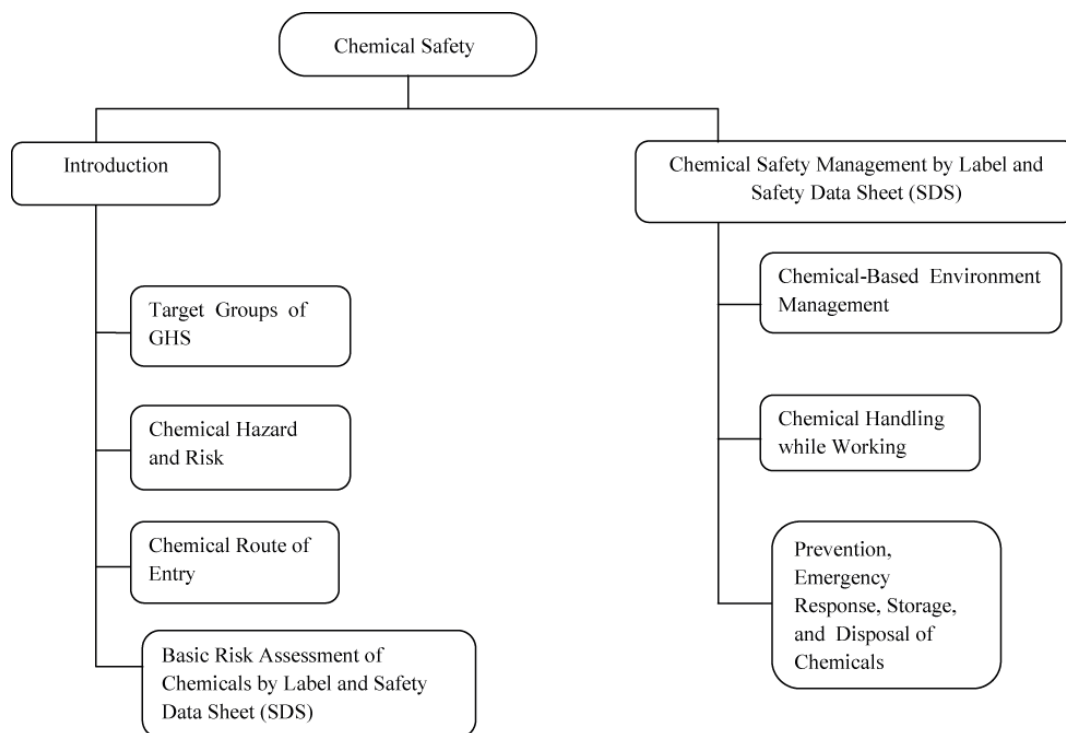
Development of LOMs

Contents of LOMs on GHS was searched from various documents, handbooks, and internet including 1) UNITAR-Thailand Workshop Training and Capacity Building for the Implementation of the GHS; 2) Handbook on Hazardous Chemical Management of Department of Industrial Work, Ministry of Industry; 3) <http://ipcs.fda.moph.go.th>; and 4) GHS "Purple Book" in Thai version from http://www.npc-se.co.th/pdf/ghs_thai_full.pdf.

The GHS contents were designed as 2 storyboards for 2 LOMs on 1) GHS and 2) Chemical Safety. The storyboards were submitted to International Program on Chemical Safety (IPCS), FDA, Ministry of Public Health for consideration and suggestions. The storyboards were revised and then sent to E-Learning Center of STOU for developing with Adobe Flash cs6. The LOMs were resubmitted to IPCS for consideration and suggestions. The LOMs were then revised before practical trying-out on-line with the students. The content of 2 LOMs were as follows:



LOM 1 “GHS: Classification and Hazard Communication of Chemicals on Health and Environment”



LOM 2 “Chemical Safety”

Practical Trying-out of LOMs among University Students

Two LOMs were uploaded on Website of School of Health Science, STOU with approval of the School in June, 20014. A total of 53 students in B.Sc. (Occupational Health and Safety) and 44 students in M.Sc. (Industrial Environmental Management) tried out these LOMs. Results and suggestions of LOMs' trying-out were evaluated through hsaosar@hotmail.com by a questionnaire reviewed by IPCS on satisfaction and knowledge acquisition.

Results and Discussion

These 2 LOMs were tried-out among 2 student groups with personal information as shown in Table 1

Table 1: Student Characteristics Participating in Trying-out 2 LOMs

Details	No. of Student	%
LOM 1 (GHS : Classification and Hazard Communication of Chemicals on Health and Environment)		
Sex		
Male	26	49.1
Female	27	50.9
Age		
21-30 years	19	35.8
31-40 years	22	41.5
41-50 years	10	18.9
< 50 years	2	3.8
Occupation		
Civil Servant	8	15.1
State Enterprise	1	1.9
Self-Employed	2	3.8
Employee	31	58.5
Student	10	18.9
Others	1	1.9
LOM 2 (Chemical Safety)		
Sex		
Male	20	45.5
Female	24	54.5
Age		
21-30 years	17	38.6
31-40 years	16	36.4
41-50 years	9	20.5
< 50 years	2	4.5
Occupation		
Civil Servant	4	9.1
State Enterprise	0	0
Self-Employed	3	6.8
Employee	29	65.9
Student	8	18.2
Others	0	0

LOM 1 (GHS: Classification and Hazard Communication of Chemicals on Health and Environment) was tried-out among 53 University students in B.Sc.(Occupational Health and Safety). Most of them were female (50.9%), 31-40 years of age (41.5%), and working as employee (58.5%). Additionally, LOM 2 (Chemical Safety) was tried-out among 44 University students in M.Sc. (Industrial Environmental Management). Most of them were female (54.5%), 21-30 years of age (38.6%), and working as employee (65.9%)

Students' Opinions towards LOM 1 (GHS: Classification and Health and Environment Hazard Communication of Chemicals)

The opinions of the students towards LOM 1 were shown in Table 2

Table 2: Opinion of the students towards LOM 1 (GHS : Classification and Hazard Communication of Chemicals on Health and Environment)

Details	No. of Student	%
Previous Knowledge on LOM 1		
Yes	28	52.8
No	25	47.2
Satisfaction towards Presentation on LOM 1		
High	40	75.5
Moderate	13	24.5
Low	0	0
Comprehensibility in Contents on LOM 1		
High	29	54.7
Moderate	20	37.7
Low	3	5.7
No reply	1	1.9
Presentation Sequence of Contents on LOM 1		
High	41	77.4
Moderate	10	18.9
Low	1	1.9
No reply	1	1.9
Utilization of Contents on LOM 1		
High	35	66.0
Moderate	16	30.2
Low	1	1.9
No reply	1	1.9

The students had previous GHS knowledge on classification and labeling of chemicals (52.8%) from various sources. They had high satisfaction with LOM 1 presentation (75.5%), understanding (54.7 %), sequence of presentation (77.4%) , and making use of LOM 1 at the high level (66.0%) with average use LOM time of 49.15 min

Normally, GHS knowledge of School of Health Science, STOU is still included in B.Sc. (Occupational Health and safety) course on Toxicology and Occupational Medicine. Therefore, LOM 1 (GHS: Classification and Health and Environment Hazard Communication of Chemicals) was then developed with the following contents: 1) introduction of GHS; 2) chemical hazard classification of physical, health, and environmental hazards; and 3) chemical hazard communication with label and chemical safety data sheet (SDS). The students had high satisfaction with the contents and presentation due to this topic might be new complicated topic and needed to have additional media. Most of them could utilize this knowledge in their future work as safety officer.

Students' Opinions Towards LOM 2 (Chemical Safety)

The opinions of the students towards LOM 2 were shown in Table 3

Table 3: Opinion of the Students Towards LOM 2 (Chemical Safety)

Details	No. of Student	%
Previous Knowledge on LOM 2		
Yes	35	79.5
No	9	20.5
Satisfaction towards Presentation on LOM 2		
High	35	79.5
Moderate	9	20.5
Low	0	0
Comprehensibility in Contents on LOM 2		
High	30	68.2
Moderate	14	31.8
Low	0	0
Presentation Sequence of Contents on LOM 2		
High	33	75.0
Moderate	8	18.2
Low	2	4.5
No reply	1	2.3
Utilization of Contents on LOM 2		
High	32	72.7
Moderate	11	25.0
Low	1	2.3

The students had chemical safety knowledge (79.5%) from various sources while working. They had high satisfaction with LOM 2 presentation (79.5%) , understanding (68.2%) , sequence of presentation (75.0%) , and making use of LOM 2 (72.7%) at the high level with average use time of 49.15 min as shown in Table 3.

Normally, Chemical safety is still included in M.Sc. (Industrial Environmental Management) course on Systems , Tools and Risk Management for Industrial Environment. Therefore, LOM 2 (Chemical Safety) was then developed with the following contents: 1) introduction; and 2) chemical safety management by label and safety data sheet. This content need to be integrated with various knowledge relating to chemical hazard. However, the students had high satisfaction with the contents and presentation of this additional media. Most of them could utilize this knowledge in their chemical safety work.

Apart from the students' opinions for 2 LOMs. The students had some valuable suggestions for revising 2 LOMS in order to make them more friendly use . After LOMs revision according to students' suggestions, National Center for Policy Development on Chemical Safety had arranged a meeting of GHS experts for LOM suggestions and summary at FDA on 31 July, 2014.

These two LOMs had then been displaying on School's and STOU's websites and FDA would co-ordinate with Inter University Network (UniNet) of the Commission of Higher Education in order to disseminate LOMs to central and regional universities in Thailand. These 2 LOMs will help the students working particularly in the companies or factories relating to chemicals to have more confidence while working.

Conclusion

The students had high satisfaction with these 2 LOMs in terms of LOM presentation, understanding, sequence of presentation, and making use of LOMs at the high level

Acknowledgement

I would like to express my sincere thanks to IPCS, FDA (Thailand) for supporting fund and co-ordinate relevant information in the research. The experts would much be appreciated for valuable suggestions in terms of the contents and application of the LOMs. Additionally, thank you for all students participating in practical trying-out the LOMs with suggestions for revising these LOMs to be users friendly and practically.

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INTERNET CONNECTIVITY AND VIRTUAL LEARNING ENVIRONMENT IN LEVERAGING TEACHING AND LEARNING

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Abstract

This paper provides some empirical-based perspectives on the trends and issues in the implementation of broadband internet connectivity and Virtual Learning Environment (VLE) in Malaysian government schools. Internet connectivity and VLE are the 2 major components under the 1BestariNet Initiative of the Ministry of Education (MOE). This initiative involves many stakeholders – school administrators, teachers, students and parents. The MOE embarked on the VLE as a means to enhancing instructional technology in teaching and learning due to: i. low achievements in TIMSS and PISA international comparative studies, ii. need to introduce new approaches in pedagogy by making all schools smart, and iii. leveraging teaching and learning to scale up quality education. Internet broadband and VLE access in all schools are the key programmes under Shift7: Leveraging ICT to scale up teaching and learning under the Malaysia Education Blueprint, 2013 – 2015. Two major components are discussed in this paper, firstly, how internet broadband connectivity via 4G wireless technology is monitored for effective implementation among stakeholders and the community and secondly, the effectiveness of VLE in the formative stages of 1BestariNet implementation from 2012 to 2014. Continuous monitoring of the trend data through the project's Dashboard has provided informed decision-making to improve implementation strategies. In addition, formative evaluation has shown that VLE has resulted in: i. significant differences ($p < .05$) among students in the use of VLE as a learning tool between primary pupils and secondary students on all aspects ranging from ease of use of Frog VLE to using VLE as a collaborative tool for interaction within and outside the classroom, ii. three critical success factors cited by teachers in the use of VLE include the functionality of VLE as a pedagogical tool (percentage of variance = 62.60%); the second is associated with the user-friendliness of the VLE (percentage of variance = 5.11%), and the third concerns the VLE as a tool for collaboration (percentage of variance = 4.21%). Other key findings show that the VLE served as a platform for teachers to share ideas and opinions, VLE being used by students to obtain learning materials, and VLE being used by teachers to source for new teaching materials.

Introduction

Malaysia is currently implementing the first phase of the Malaysia Education Blueprint (MEB), 2013 – 2025. The MEB outlines 3 Waves of implementation strategies with the core objectives to be fully achieved by 2025. The main aim of the Blueprint is to leapfrog Malaysia's education system, i.e. to be among the first one-third of the top performing countries in the Trends in International Mathematics and Science Study (TIMSS) and Programme for International Student Achievement (PISA) international comparative studies. Due to this aim, many initiatives were planned to be implemented during the duration of the MEB. Within these initiatives, there are programmes and activities with specific objectives to be implemented over a specific period of time. One of these major initiatives is 1BestariNet, to be implemented over several phases. This paper discusses 2 main aspects of the 1BestariNet initiative, i.e. i. Broadband Connectivity, and ii. Virtual Learning Environment.

The 1BestariNet Initiative

The need for a good infrastructure in broadband connectivity and a platform to drive teaching and learning in Malaysian schools is seen as an important step in ensuring good educational outcomes. Educational outcomes can be attained if teachers teach effectively and students learn well. The conventional approach of teaching and learning must be improved if Malaysia wants to be among the top performing countries in TIMSS, PISA and TALIS (Teaching and Learning International Study). For TIMSS and PISA, the current cycle places Malaysia at the bottom one-third among participating countries. In the TALIS study many indicators ranked Malaysia in the median categories. The

Ministry of Education (MOE) believes that information technology can be used to “drive” educational outcomes over time.

The MOE engaged UNESCO to undertake a comprehensive evaluation of its education system with a view to suggesting improvements to the system. This has led to a comprehensive review by UNESCO experts in 2012. The Malaysia Education Policy Review conducted by UNESCO (2012) noted the following:

“Malaysia is in fact lagging behind in this area (ICT in education) in comparison to many other economies in the region (e.g. Singapore, Republic of Korea, Taiwan, Hong Kong SAR) even in terms of student : computer ratio. The ICT infrastructure standard for schools has not improved since the launch of the Smart School programme. In fact the situation for many of the early starters have become worse because of the aging equipment. Further, most of the cases have not gone much beyond the use of ICT as an instructional tool, using programs such as PowerPoint. There is little evidence that ICT is being used to foster students’ creativity, problem solving, critical thinking and communication skills.” p.105

Against this evidence, MOE Malaysia incorporated ICT in Education under Shift 7 in the MEB, 2013 – 2025. Shift 7 emphasises on leveraging ICT to scale up quality learning across all 10,000 schools in the country by providing internet access and a virtual learning environment via the 1BestariNet Initiative.

Broadband Connectivity in Schools

A major element of Shift 7 under the first Wave (2013 – 2015) of the MEB is to provide high speed internet connectivity to all schools in Malaysia under the 1BestariNet Initiative. All schools, whether they are located in the remote interiors, rural, suburban or urban areas are provided with high speed internet connectivity with speeds of between 2 to 4 Mbps or 4 to 10 Mbps. For schools located in the interiors, the solution lies in using VSAT technology. Suburban, urban and some rural schools are provided with high speed internet access via 4G technology. While VSAT technology has certain limitations such as the need for a configured contention-ratio in terms of accessibility, 4G schools can only be provided when there is a good fibre backhaul and availability of a sufficient number of transceiver stations.

In Malaysia, the construction of transceiver stations which come mostly as towers in some cases faced objections from the community and schools. People are generally afraid of the effect of radiation from these stations. As a result, briefing sessions involving multiple parties have to be conducted allay community’s fear. In addition, the cost of building a sufficient number of towers is high. There is a need for systematic planning to take place at the central level and appointment of a vendor to undertake a coordinated planning effort towards realising the objective of ensuring quick internet connectivity in all schools. At the moment, more than 90% of schools in the country have been provided with access to high speed broadband.

The Virtual Learning Environment

Malaysia is perhaps one of the few countries in the world to implement a proprietary virtual learning environment accessible to all school administrators, teachers, students and parents. This has resulted in the implementation of the Frog Virtual Learning Environment (VLE) in all government schools. Frog VLE was chosen for its proven ability in leveraging teaching and learning among teachers and students in many countries, specifically the United Kingdom. Using VLE, the MOE introduces collaborative and cooperative learning. Frog VLE brings this collaborative and cooperative learning environment one step further by involving parents directly in the education pursuits of their children. The Frog VLE (Frog Asia, 2015) is a web-based learning system that replicates real-world learning by integrating virtual equivalents of conventional concepts of education. For example, teachers can

assign lessons, tests, and marks virtually, while students can submit homework and view their marks through the VLE. Parents can view school news and important documents while school administrators can organise their school calendars and disseminate school notices via the internet.

Through the VLE, virtual learning can take place synchronously or asynchronously. In synchronous systems, participants meet in “real time” and teachers conduct live classes in virtual classrooms whereas in asynchronous systems resources are used to facilitate information sharing outside the constraints of time and place among a network of learners. In whatever the approach, virtual learning must facilitate ubiquitous learning - learning which takes place anywhere and anytime. To facilitate ubiquitous learning, there must be sufficient mobile devices and for this reason MOE Malaysia is providing Mobile Labs for both primary and secondary schools via the Chromebook programme and also the school Netbook programme. Chromebooks and netbooks being portable devices can be linked to the internet easily and serve as a repository of knowledge via Frog VLE. The Frog VLE comes with a number of custom-developed teaching and learning resources called “Learning Sites” and these can be accessed when logged-in.

Virtual Learning Environment in Teaching and Learning

The current literature review points to the VLE being a tool with multiple applications in teaching and learning. Hanna (2003) describes the impact of the internet and virtual learning on distance education as follows:

“The development and deployment of the internet has radically altered the technological environment for distance learning, opening up many new possibilities for connecting learners and teachers. The internet has enabled an efficient way of distributing information and sharing knowledge globally, which has led to virtual interactions among people. The interactions first began with simple e-mail, added power with the growth of listservs, and have since evolved into numerous strategies for creating powerful new opportunities for online interaction. [...], there is little disagreement that its arrival has opened up many new possibilities for delivering education.” pp. 73-74

Volery & Lord (2000) stated that this technological progression serves as a means for interactive learning where course materials are more widely and effectively distributed. Researchers further believe that the current method of online learning easily brings participants together as a networked community through the use of the internet and multiple technologies, thereby enhancing interaction with course content and communication with fellow class members. Wilson (1996) described the online learning environment as a relatively open system that facilitates access to resources and encounters with other participants. In addition, learners can access contents on their own time and follow different paths to get through the academic materials, and online learning extends the ability for participants to communicate through interactions and discussions (Bouhnik & Marcus, 2006). Amongst the many benefits cited by researchers, a major reason for the growth in virtual learning has been due to its ability to transcend the boundaries of time and place. Students have the benefit of retrieving learning materials at their convenience in terms of when, where, which content, and how much (Bouhnik & Marcus, 2006; Liaw, 2007).

Virtual learning is no longer an individual endeavour as the learner takes advantage of the widely available network infrastructure to leverage the many-to-many relations among learners and with instructors (Piccoli, Ahmad & Ives, 2001). Virtual learning allows students to have more time to reflect on the materials at hand and collect their thoughts (King, 2002). This makes discussions more succinct and focused, with opportunities to collaborate and easily share information (Capper, 2001). According to Naidu (2003), students in online learning and other flexible learning environments often work independently with self-instructional study materials.

A major characteristic of virtual learning environment is that it follows the Self-Directed Learning (SDL) Process Model. SDL originated from the research of John Dewey, focusing on the experience of the learner. SDL is a learning process where students develop skills to take ownership of their learning activities. The distinguishing characteristic of SDL is that students play a significant role and accountability for their own learning. This can be equated to the use of constructivism. SDL serves as a means to illustrate the phases of learning activities, thereby facilitating an active learning process that improves self-management and self-monitoring of activities to meet individual learning goals.

Kim (2010) puts forth a theoretical model of virtual learning via a number of phases. The first phase, known as “establishing learning goals”, involves the learner identifying what he or she hopes to accomplish from a given learning experience and their participation in a course. The learner's goals may include earning a good grade, mastering course content, and learning information relevant to one's career goals. The second phase is known as “locating and accessing resources” – this phase involves the student identifying what resources he or she may need, and accessing them for use as part of the learning activity. Resources may include textbooks, learning materials from the instructor, the internet, the library, online discussions with peers, and interactions with the instructor. The third phase, called “adopt and executing learning activities” involves the student deciding on a specific plan of action that is aligned with the established goals and use of available resources. The fourth phase, called “monitoring and evaluating performance” entails the student tracking and measuring actual performance of results to previously established learning goals. The fifth and last phase is called “reassessing learning strategies” and involves the learner self-reflecting and re-examining the various phases completed to determine ways in which the student can improve his or her learning experience. Kim's five-phase process can be seen as an iterative flow of activities to fit the learner's needs. The primary concept of the model is based on research findings that students must be proactive in managing their learning processes rather than wait for learning to be passed on by the instructor. Active construction of knowledge is needed.

The literature on the role of parents in fostering learning via VLE varies. Henderson & Mapp (2002) assert that parental involvement has “a myriad of stellar outcomes, including greater standardized test scores, higher grades, better attendance, improved social skills and a greater likelihood of admission to post secondary institutions.” p. 9. Strom & Strom (2003) highlight the role of parents within the context of home-school communications, i.e. “when parents and teachers fulfill complimentary roles, they can improve student social development and academic achievement.” p. 2. Kallis (2004) notes that “studies consistently show that parent involvement raises the achievement of children, improves the child's attitude toward school, and enables parents and children to communicate by letting parents understand and support the work of the school.” p. 3.

Issues on Broadband Internet Connectivity

For a national project involving all government schools in Malaysia, many issues emerged from the beginning of the 1BestariNet implementation.

Need for Constant Monitoring of Progress

For a project of this magnitude and scope to be implemented successfully, there is a need for constant monitoring of its progress. As earlier pointed out, two types of technology are used in “universalising” broadband internet connectivity to all schools, i.e. i. VSAT technology for remote schools, and ii. 4G technology, suburban, urban and some rural schools. The MOE established PADU (Performance and Delivery Unit), a programme management office, to oversee the implementation of initiatives under the MEB. Under PADU, programme managers were appointed to manage each initiative. One of the tasks of programme managers is to ensure the smooth implementation of the project and in doing so a monitoring mechanism is set up. For this initiative, a fully computerised dashboard is used to monitor each and every school's connectivity status. The designated team has to

monitor all technical problems associated with this Virtual Private Network at the Data Centre and also at the Educational Technology Division (ETD) of the MOE.

Network quality in terms of broadband speed was monitored and reported to PADU on a weekly basis for remedial action to be undertaken, if necessary. The monitoring mechanism generates quality of service reports and a sample of the report is shown below:

Report Date: 18 December 2014

The total number of schools connected via 4G technology is 6,622. This total does not include schools in Sarawak.

An analysis of 4,811 schools for broadband connectivity this week based on frequencies of between 1 to 21 measurements show the status as follows:

- 0 - 3.9 Mbps: 4 schools (0.1%)
- 4.0 – 4.9 Mbps: 0 school (0%)
- 5.0 - 5.9 Mbps: 3 schools (0.1%)
- 6.0 - 6.9 Mbps: 15 schools (0.3%)
- 7.0 - 7.9 Mbps: 26 schools (0.5%)
- 8.0 - 8.9 Mbps: 18 schools (0.4%)
- 9.0 - 9.9 Mbps: 26 schools (0.5%)
- 10.0 Mbps and above: 4,716 schools (98.0%)

Conclusion: KPI 1 achieved. A total of 4,807 schools or 99.9% of schools connected via 4G technology had attained speeds of more than 4 Mbps while 0.1% (4 schools) attained speeds below the Service Level Agreement of 4 Mbps.

In addition to the weekly reports, periodic reports on network quality were also prepared for informed decision-making to the relevant high-level committees of the MOE. The structure of reports is shown in Figures 1 and 2 below:

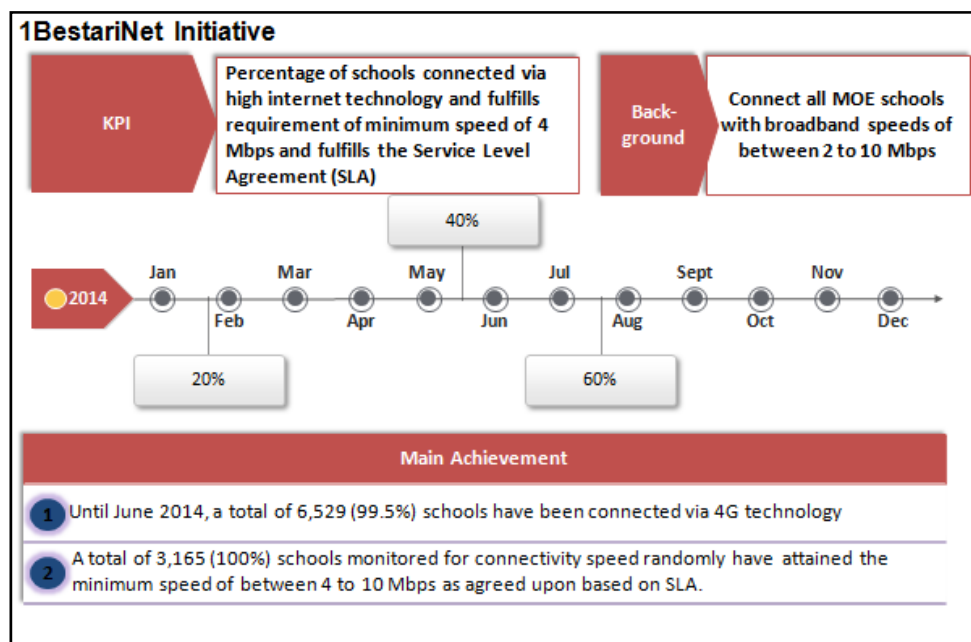


Figure 1: Structure of Report – 1BestariNet Initiative

Broadband Connectivity on 3 July 2014

Test Date	Sample	Speed Category	Frequency	Percent	KPI Status
3 July 2014	3,165	1. 0 – 3.9 Mbps	0	0	Did not achieve KPI
		2. 4.0 – 4.9 Mbps	0	0	Achieved KPI
		3. 5.0 – 5.9 Mbps	0	0	Achieved KPI
		4. 6.0 – 6.9 Mbps	20	0.6	Achieved KPI
		5. 7.0 – 7.9 Mbps	14	0.4	Achieved KPI
		6. 8.0 – 8.9 Mbps	25	0.8	Achieved KPI
		7. 9.0 – 9.9 Mbps	22	0.7	Achieved KPI
		8. 10.0 Mbps & above	3084	97.4	Achieved KPI
			3165	100	Achieved KPI

Percentage of schools achieving KPI: 100% schools (3,165 out of 3,165 schools tested)

Figure 2: Structure of Report – Broadband Connectivity

Quality of Service

To ensure compliance with the Terms of the Contract between the Service Provider and the MOE, a quality of service survey was carried out by independent parties (recommended by MCMC) to measure network services at the Data Centre and in schools. In addition, an internal mechanism was also put in place whereby the ETD via its organisations at the state (State Educational Technology Division) and district levels (Teacher Activity Centre) undertook work to measure connectivity quality and report to the ETD. If service was not satisfactory, a report would be submitted and the service provider would be informed to rectify the problem within 24 hours. If such problem were not rectified then a surcharge would be levied on payments.

Examples of service quality reports include: i. Latency ii. Packet loss iii. Jitter iv. Download throughput v. Upload throughput vi. Voice quality and vii. Mean Opinion Score. Some examples (see Figure 3: Average Latency and Figure 4: Average TCP Packet Loss) of these are shown below:

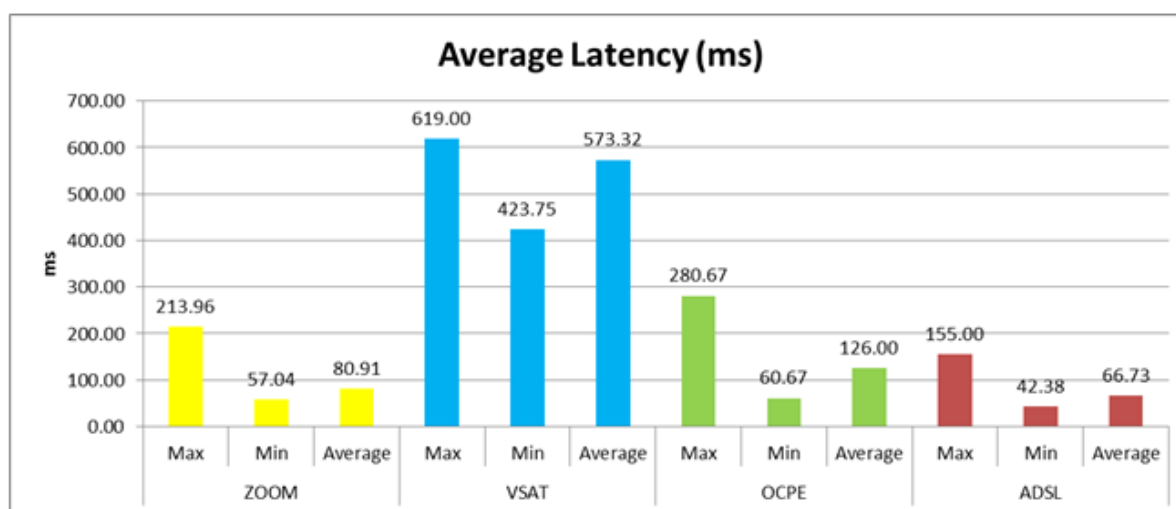


Figure 3: Average Latency

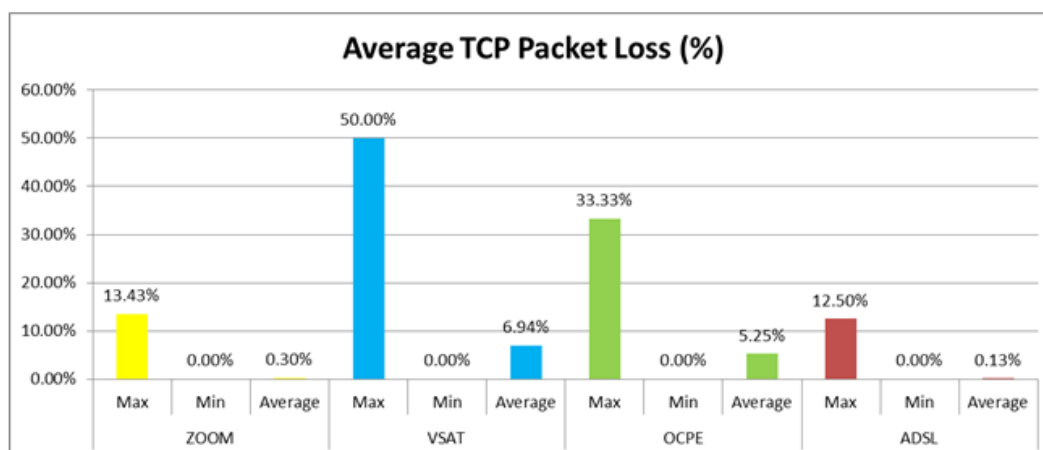


Figure 4: Average TCP Packet Loss

On the whole, findings carried out by independent parties and ETD show a generally good quality of service of the 1BestariNet broadband network. With the existence of a Helpdesk based at the Data Centre and also at the Helpdesk in ETD, all issues related to service quality and problems could easily be resolved.

Survey on the Use of Frog VLE in Malaysian Schools

Methodology

A survey was undertaken by ETD, MOE to study the use of Frog VLE among teachers and students in both primary and secondary schools. The sample comprised 426 teachers of which 254 were primary school teachers and 172 secondary schools teachers. In addition, 223 students, comprising 134 primary school pupils and 89 secondary school students were also included in the survey sample. A stratified random sampling method was used to select respondents from all states in Malaysia.

Two questionnaires were administered, i.e. i. Teacher questionnaire, and ii. Student questionnaire. The teacher questionnaire comprised 9 sections: i. School information, ii. School dashboard, iii. Login ID, iv. Departmental sites, v. School VLE usage analytics, vi. Characteristics of Frog VLE, vii. Usage of Frog VLE, viii. Development of web sites for teaching and learning, and ix. Problems related to the use of VLE. The student questionnaire comprised 3 sections: i. Student demographics, ii. Use of Frog VLE, and iii. Characteristics/features of VLE.

A Likert-type scale was used to elicit responses from both students and teachers on the use of VLE via a 5-point rating scale with 1 corresponding to “Strongly Disagree”, 2: “Disagree”; 3: “Somewhat Agree”; 4: “Agree” and 5: “Strongly Agree”.

Cronbach alpha reliability statistics show the scale items from the teacher questionnaire attained a reliability coefficient (alpha) of .973 (24 items) for the 5-point rating scale construct pertaining to characteristics of Frog VLE. The student scale items in the questionnaire on characteristics of Frog VLE attained a reliability coefficient of .918 (8 items).

Evaluation Framework

The study used a programme evaluation conceptual framework based on the constructs outlined above and following the Scriven (1967) evaluation paradigm as used in formative - summative evaluation classification. The primary purpose of formative evaluation is to provide information for programme improvement. On the other hand, summative evaluation is concerned with providing information to serve decisions or assist in making judgments about programme adoption, continuation, or expansion. This study follows the framework used in formative evaluation.

Scriven put forth a list of concerns and checklists related to the formative-summative paradigm and outlined the criteria for evaluating educational product as comprising: i. Evidence of achievement of important educational objectives, ii. Evidence of achievement of important non-educational objectives (e.g. social objectives), iii. Follow-up results, iv. Secondary and unintended effects (e.g. effects on teachers, school, other students), v. Range of utility (e.g. for whom it will be useful), vi. Moral considerations (e.g. controversial content), and vii. Costs.

Scriven (1967) defines evaluation as judging the worth or merit of something. Others such as Fitzpatrick, Sanders & Worthen (2004) define evaluation as “the identification, clarification, and application of defensible criteria to determine an evaluation object’s value (worth or merit) in relation to those criteria.”

Basically, the evaluation uses inquiry and judgment methods such as: i. Determining standards for judging quality and deciding whether those standards should be relative or absolute, ii. Collecting relevant information, iii. Applying the standards to determine value, quality, utility, effectiveness, or significance, iv. Evaluation leads to recommendations intended to optimise the evaluation object in relation to its intended purpose(s) or to help stakeholders determine whether the evaluation object is worthy of adoption, continuation, or expansion.

Findings From the Study

The findings are divided into two sections, i.e. i. Students’ perceptions, and ii. Teachers’ perceptions. The study shows a generally successfully implementation of Frog VLE. Only key elements are presented in this paper. For the teachers’ perceptions, factor analysis was used to determine salient factors of teachers’ perceptions with regard to the use of Frog VLE. Other pertinent issues are also discussed such user IDs, school dashboard, and learning sites.

Students’ Perceptions of VLE

From the students’ perspectives, secondary students tended to perceive significantly higher than primary school pupils. Table 1 shows the mean value of the construct on VLE use for secondary students is higher (mean = 4.18; S.D. = .713; n = 89) compared to primary pupils (mean = 3.81; S.D. = .789; n = 134). The Levene statistic shows equality in the variances between the two groups of respondents. The finding shows that the means for primary and secondary pupils are significantly different at a confidence interval of 95%. From Table 2, it can be concluded that the the 2 groups’ means are significantly different ($t=-3.593$; $df=211$; $p < .05$). The question is why is there a significant difference? The ratings for secondary students are significantly higher as compared to primary pupils because VLE was more profoundly used by secondary students, hence the higher mean values. This can also be attributed to VLE being better utilised at the secondary school level as the construct was based on the use of VLE as a learning tool.

Differences in the perceptions of primary and secondary students in use of VLE are shown in Table 1 below:

Table 1: Descriptive Statistics of Primary and Secondary Students' Perceptions

Type of Schools	N	Mean	Std. Deviation	Std. Error Mean
Primary Schools	134	3.8110	.78930	.06819
Secondary Schools	89	4.1844	.71345	.07562

Table 2: t-test Computations for Differences between Primary and Secondary Students

	Levene's Test for Equality of Variances		t-test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	2.699	.102	-3.593	221	.000	-.37336	.10392

Table 3 shows the statistical computations comparing the mean ratings of primary and secondary students for each item in the construct. Of the key elements, students perceived highest in the VLE being an interesting tool for learning (mean = 4.29; n = 223; SD = .788) while collaboration among peers in doing assignments both within the classroom and outside the classroom was rated lowest, i.e. with mean = 3.79 (n = 223; SD = 1.02) for collaboration within classroom and mean = 3.79 (n = 223; SD = 1.03) respectively.

Table 3: Students' Perceptions in Key Areas of Frog VLE

Statistics		Interes-ting	Easy to use	Easy to update	Used for Society & Club activities	As a resource respository	Collabora-tion with peers in doing assignments in the classroom	Collabora-tion with peers in doing assignments outside the classroom	Used for comple-ting homework
Primary Schools	Mean	4.172	3.873	3.806	3.686	3.964	3.648	3.633	3.707
	N	134	134	134	134	134	134	134	134
	Std. Deviation	.8274	.9689	.9922	.9208	.9047	1.0348	1.0295	1.1021
Secondary Schools	Mean	4.475	4.225	4.281	4.169	4.304	4.011	4.034	4.112
	N	89	89	89	89	89	89	89	89
	Std. Deviation	.6908	.8223	.8117	.9322	.8171	.9593	.9937	.8718
Total	Mean	4.293	4.014	3.995	3.878	4.100	3.793	3.793	3.869
	N	223	223	223	223	223	223	223	223
	Std. Deviation	.7883	.9275	.9515	.9532	.8848	1.0189	1.0321	1.0337

Key Success Factors Cited by Teachers in the Use of Frog VLE

Factor analysis was used to determine the key success factors cited by teachers. The data structure was tested for factor analysis suitability via the Principal Component Analysis method. The appropriateness of using factor analysis was tested using Bartlett's test of sphericity which is a statistical test for the presence of correlations among the variables. This test determines the statistical significance for correlations among the variables. Bartlett's test of sphericity shows a significance level of less than .05 (chi-sq=10156.698; df=276; p<.001). This means that the data structure of the

variables was appropriate for factor analysis. In addition, the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (MSA) was used to quantify the degree of inter-correlations among the variables and the appropriateness of factor analysis. The MSA value is very high, i.e. .962 indicating that factor analysis was appropriate.

On the key success factors, the latent root criterion is used. This is the most commonly used technique. With Principal Component Analysis, each variable contributes a value of 1 to the total eigenvalue. Thus, only factors having latent roots or eigenvalues greater than 1 are considered significant and all factors with latent roots less than 1 are considered insignificant and disregarded (see Figure 5).

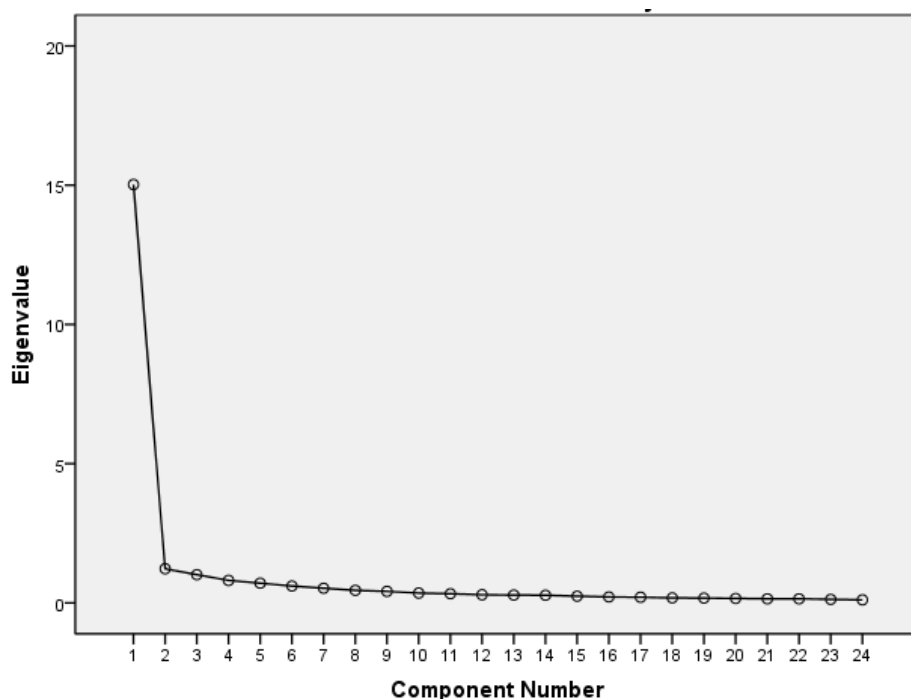


Figure 5: Scree plot of components/factors

The findings also show that the percentage of variance criterion jives well with the latent root method in the extraction of factors. The variance criterion method is an approach used for achieving a specified cumulative percentage of total variance extracted by successive factors. The purpose is to ensure practical significance for the derived factors by ensuring that they explain at least a specified amount of variance. Using the percentage of variance criterion, the first factor is labelled as “Functionality of VLE as a pedagogical tool” and this contributes 62.60% to the variance, the second factor is labelled as “Physical attributes of VLE” and it contributes 5.11% and the third factor is labelled as “Tool for collaboration” and this contributes 4.21% of the variance. Specifically, an analysis for the congruence of factors indicates that the first factor concerns the development of resources, curriculum management and ubiquitous learning. The second factor concerns user-friendly graphical user interface leading to ease use and it must be interesting. The third factor concerns communication among teachers, parents and students in a collaborative virtual environment.

An analysis of ranks in the mean values derived from the factors is shown in Tables 4 (a) and 4 (b) below. Within items in the first factor, the first rank goes to “VLE providing a platform for teachers to share ideas and opinions” (mean = 3.79). The second rank goes to “VLE as a portal for students to obtain learning materials”(mean = 3.71). Third on the rank is the item “VLE is used by teachers to recommend teaching resources” (mean = 3.67). For the second factor (see Table 5), rank 1 concerns the “Resources in VLE are interesting” (mean = 3.80). The second rank concerns “VLE being used by teachers for sharing lesson plans and resources” (mean = 3.76). Third is “Teaching and learning

occurs any where and any time” (mean = 3.68) which is synonymous with the ubiquitous nature of VLE. For the third factor (see Table 6), the item which is ranked first is “Parents find VLE easy to use” (mean = 3.57), the second rank is “Parents feel they are a part of the school community” (mean = 3.49). The third rank goes to “Parents can monitor progress of children” (mean = 3.28).

Table 4 (a): Items within the First Factor

	Use Frog VLE for home-work	Students can obtain revision materials	Students can collaborate with friends in doing homework after school	Serves as a portal for students to obtain learning materials	Students can collaborate with friends in doing homework during school	Students can personalise self-learning	Allows sharing of ideas
Mean	3.5078	3.6293	3.5844	3.7050	3.5607	3.5857	3.7857
N	426	426	426	426	426	426	426
Std. Deviation	.78774	.73386	.73840	.69107	.75000	.68924	.61398
Rank	11	5	8	2	9	7	1
Factor Loading	.788	.786	.758	.750	.747	.736	.683

Table 4 (b): Items within the First Factor

	Teachers can recommend teaching resources	Monitor teaching & learning quality	Allows self-evaluation	Help teachers assess students	Manage societies and clubs	Teachers can involve students in class	Teachers can personalise lessons	Teachers can discuss with students in a secure environment
Mean	3.6667	3.4625	3.6120	3.5141	3.6438	3.4437	3.5857	3.5298
N	426	426	426	426	426	426	426	426
Std. Deviation	.63121	.73493	.65668	.69568	.70525	.83594	.69264	.69531
Rank	3	11	6	12	4	13	7	10
Factor Loading	.659	.659	.650	.617	.593	.553	.542	.531

Table 5: Items within the Second Factor

	Easy to update materials	Easy to use	Resources in VLE are interesting	Sharing of lesson plans and resources	Can be used in multiple devices and mobile phones	Teaching and learning occur any where and any time
Mean	3.5483	3.5745	3.7950	3.7571	3.2759	3.6770
N	426	426	426	426	426	426
Std. Deviation	.74755	.78021	.70037	.69332	.86735	.76759
Rank	5	4	1	2	6	3
Factor Loading	.852	.793	.730	.629	.582	.522

Table 6: Items within the Third Factor

	Parents can monitor progress of children	Parents feel they are a part of the school community	Parents find VLE easy to use
Mean	3.2808	3.4860	3.5745
N	426	426	426
Std. Deviation	.79707	.78843	.78021
Rank	3	2	1
Factor Loading	.867	.785	.730

Table 7 shows the contents created in the School Dashboard. Majority of school teachers indicated that they had uploaded contents which were useful for those who had access to their school websites. Of the contents created, a large majority of schools had school address and telephone contacts (87.1%) and also mission and vision statements of the school (83.6%). School song (55.2%) and school Head's remarks (57.5%) seemed to be the least emphasis given by the schools.

Table 7: Contents Created in School Dashboard

Contents		Frequency	
		Yes	No
1	Opening Remarks by School Head	245 (57.5%)	181 (42.5%)
2	School Address and Telephone Number	371 (87.1%)	55 (12.9%)
3	School History	295 (69.2%)	131 (20.8%)
4	Mission and Vision	356 (83.6%)	70 (16.4%)
5	School Song	235 (55.2%)	191 (44.8%)
6	Organisational Chart	279 (65.5%)	147 (34.5%)
7	School Events	294 (69.0%)	132 (31.0%)
8	Booking Calendar	261 (61.3%)	165 (38.7%)

Under the VLE component of 1BestariNet, a total of 10 million unique IDs had been given to school administrators, teachers, students and parents. The school community needs to log-in to the VLE using their individual IDs. The findings of this study (see Table 12) show that a very high proportion of teachers had received their IDs (396 (93%)). However, many students and parents did not receive their IDs. The percentage of students who did not receive their IDs is 45.1% (192) as against 54.9% (234) who indicated they had received their IDs. The findings from parents seem rather disappointing, i.e. only 25.1% (107) of the parents had received their IDs as compared to 74.9% (319) of parents who had not.

Table 12: IDs Received by Teachers, Students and Parents

Groups		Frequency	
		Yes	No
1	Teachers	396 (93.0%)	30 (7.0%)
2	Students	234 (54.9%)	192 (45.1%)
3	Parents	107 (25.1%)	319 (74.9%)

The creation of subject-based learning sites is an important feature of Frog VLE. The study shows that majority of teachers had indeed created learning sites (> 60%). Malay/Bahasa Malaysia had the most number of departmental sites, i.e. 296 (69.5%) of teachers indicating “Yes” for this subject. This is followed by Mathematics comprising 279 (65.5%). Table 13 below shows the frequencies and percentages of departmental sites created.

Table 13: Departmental Sites in VLE

Groups		Frequency	
		Yes	No
1	Malay	296 (69.5%)	130 (30.5%)
2	English	269 (63.1%)	157 (36.9%)
3	Mathematics	279 (65.5%)	147 (34.5%)
4	Science	266 (62.4%)	160 (37.6%)

Majority of the teachers indicated that the departmental sites had been created to serve as a channel for the dissemination of information. Findings from the study reveal that 75.1% (320) of the teachers stated “Yes” for this purpose as compared to 24.9% (106) who responded “No”. As to the question of whether students could view these departmental sites which had been created, again the majority i.e. 73% (311) indicated “Yes” while 27.0% (115) indicated “No”.

Use of VLE for Teaching and Learning

Findings from the study show varying degree of uses for VLE in teaching and learning. The majority of teachers (65.2%; n=208) stated that they used VLE for teaching and learning while 34.8% (111) stated they did not. Only 47.5% (152) of teachers stated they used VLE as a medium to send homework to students as compared to 52.5% (168) who stated they did not. The majority of teachers, i.e. 67.1% (214) stated that students did not use the VLE to send assignments as compared to only 32.9% (105) who stated they did. In relation to the question whether teachers checked the assignment of students using VLE, a majority i.e. 68.6% (218) stated “No” while only 31.4% (100) indicated “Yes”. The survey also studied the use of teaching and learning resources in the Frog Store for teaching and learning and a majority i.e. 51.7% (164) teachers stated they did not while 48.3% (153) stated they used those resources in Frog Store for teaching and learning.

Website Development within Frog VLE

The development of websites is important in virtual learning. Websites provide the opportunity for teachers to develop their instructional materials and upload them for use by students and other teachers. From the study, it is noted that 88.5% (285) of teachers continuously updated their personal dashboard while 11.5% (37) did not. The majority of teachers, i.e. 77.6% (250) had used the VLE to develop resources in Frog VLE as compared to 22.4% (72) who did not. On the sharing of sites, 64.8% (208) teachers indicated that they shared teaching and learning sites with others in the school as compared to 35.2% (113) who did not. As to the question whether teachers shared their sites in Frog VLE through the MOE repository, a large number of the teachers, i.e. 72.4% (233) said they did not while only 27.6% (89) said they did.

Discussion

The findings support previous research in this area, indicating that functionality and usability of the VLE (as shown by good VLE attributes) and the ability to facilitate collaborations are what a VLE should be. For the implementation of VLE to be successful, it is important that a good broadband connectivity be provided. Resources within the VLE must be sufficient for teachers and students to leverage on teaching and learning. On top of that, the introduction of a project of such magnitude must lead to positive outcomes in teaching and learning.

To successfully implement the VLE, it is very important that there is buy-in from all stakeholders. Very frequently change management is not implemented effectively, resulting in poor adoption and buy-in. But the Frog VLE has a change management component built into its implementation. Carnivals, conferences, briefing sessions, hand-holding activities and promotions on a nation-wide basis are imperative to disseminate the use of Frog VLE as teaching and learning portal.

Another important issue is motivation. How can we motivate teachers and students in using the VLE? Continuous professional development must take place in phases. The MOE implements training in phases and create a core group of “Champion Schools” which serve as catalysts schools for others to emulate.

Therefore, it is imperative that a VLE must be effective, reliable, operable, functional, learnable, memorable, and efficient. Students and teachers must feel comfortable with the system in order to focus on learning the contents. Since usability was found to be a significant contributor to teachers’ needs, it is of utmost importance for schools to consider leveraging virtual learning environments in teaching and learning. The MOE is planning for the establishment of virtual schools to leverage on ICT in education and upscale teaching and learning. Indeed the Malaysia Education Blueprint, 2013 – 2025 emphasises the need to upscale teaching and learning through ICT.

Conclusion

Internet connectivity and a platform to deliver instruction are important in teaching and learning. Internet connectivity complements virtual learning. However, as to whether instruction can be delivered effectively is dependent upon other factors such as stakeholders adopting the innovation and participating actively. The quality of service provided via internet connectivity has a direct relationship on access to the gateway in which the virtual learning portal is hosted. When learning is made accessible to each and every teacher and student, the gateway must be sufficiently broad to ensure easy and quick connectivity. Otherwise students and teachers will lose interest in using the VLE. For an instructional technology initiative to be successfully implemented, huge capital expenditure is needed. There must be a determined will to succeed and full adoption is essential. Investment in education is always a worthwhile endeavour.

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PRACTICING UBIQUITOUS LEARNING BASED ON CULTURE IN INDONESIA DISTANCE EDUCATION

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Abstract

A public lecture has many obstacles to be conducted in distance education in Indonesia. Some of the obstacles are the spread of the students across Indonesia, the limited number of charismatic figures, and the time constraints of the charismatic figures. Based on the development of information and communication technology (ICT), the public lecture presentation can be done through the use of ICT. In this way, the number of recipients or the target recipients become very large and can be done in many areas at once than if occurs in the face to face meetings. For these reasons, are search about a public lecture-based ubiquitous learning (u-learning) in distance education was conducted by the researchers. This research was conducted based on the Indonesian culture about the role of a highly credible academic lecturers or charismatic figures at a public lecture in a face to face university which are expected to affect behavior changes of the freshmen in understanding the core of the courses. This paper would discuss the result of the research in Universitas Terbuka (UT) as a distance education university in Indonesia which showed interesting findings. Those are: (1) a model of learning media prototype of a lecture-based ubiquitous learning (u-learning) or multi studio-based learning which could provide an enlightenment from the charismatic figures that also allow asynchronous learning, (2) quantitatively, the results of testing on the new student orientation activities in one of the UT's regional office which shows that all the responses students responded positively. About the media performance quality, 71.13% of the students who answered good, while the students who answered good for the layout of the media are 68.25%, and the students who answered good for the public lectures systematics are 70.38%; (3) qualitatively, the try out test results tried to show that this public lecture media is useful and accepted by the new students but not by the students of the last semester, that were semester 3 and 4. The use of media in remote areas should also consider on the availability of electrical appliances and other technical equipment. The media prototype or product generated in this study is expected to be used by various higher education institutions that require the content of the product, and can become an example for the development of a variety of enlightenment lecture materials.

Keywords: *Asynchronous learning, distance education, learning media, multi studio-based learning, prototype, public lecture, ubiquitous learning, u-learning*

Introduction

This paper is a dissemination paper about a research conducted by the writer and the team, that is "Prototype of a ubiquitous learning based public lecture in distance education" which was conducted in 2012 (Darmayanti, Bintarti, & Suharmini, 2012). However, this paper will focus the discussion on how practicing ubiquitous learning based on Indonesia culture in distance education.

The research in 2012 was conducted based on the other research by Darmayanti etc (2008) who found that distance education students also need of modeling figures even they do not meet face to face with the modeling figures. In their research, an experiment about modeling figures were provided to the distance students through printed media. The results of this research show us that modeling figures, who were presented through printed media, could accommodate a learning of distance education students (Darmayanti etc, 2008).

On the other hand, the development of information technology which grow rapidly does not balanced with the media utilization in Indonesia distance education, especially Universitas Terbuka (UT). All of those conditions, those were: the need of public figures who could be modeling figures and the limitation of information technology utilization, become a concern to develop a prototype media based on ubiquitous learning in distance education. Therefore, the purposes of the research were to develop a learning media prototype of a public lectures-based ubiquitous learning (Darmayanti, Bintarti, & Suharmini, 2012).

Media based on Ubiquitous Learning

The research reported in this paper was conducted based on the concepts of ubiquitous learning or u-learning and also charismatic public figures in distance education.

Ubiquitous learning or u-learning is a kind virtual learning. Jones and Jo (2004) and Park (2010) explained that u-learning enables learning can be accessed anywhere, by anyone, and anytime on various situation without special skills. Based on the concept of u-learning, it is understood that u-learning could accommodate a distance education system of learning, where there is separability physical between the students or persons who learn and the teachers/lecturers.

Moreover, in distance education, the utilization of media as a part of technologies is one of the important characteristic of distance education. As mentioned by Moore and Kearsley (2012) in their book: *"Distance education: A systems view of online learning"* as follows:

Distance education is a teaching and planned learning in which teaching normally occurs in a different place from learning, requiring communication through technologies as well as special institutional organizational. (p. 2)

The utilization of media in learning activities will make learning programs in distance education become more efficient. In this research, a media of learning is expected to be showing realization of the public figures who has an academic national scale and also has a charisma and credibility.

Modeling Figure

The research reported in this paper was conducted based on the concept that teacher has a charismatic figure that has many followers, as mentioned by Kuntowijoyo (1987). The concept of charismatic figure also explained by Perloff (2010). According to Perloff, charismatic speakers, who also charismatic figures, have seemed to magnetize audiences, influencing attitudes in benevolent and malevolent ways. Perloff (2010) explained that charisma involves a host of characteristics, not well understood, and for this reason scholars have tried to break down the term into constituent parts. There are three core communicator qualities that the researcher have focused: authority, credibility, and social attractiveness.

The famous expert in social psychology, that is Albert Bandura, also explained about the role of charismatic figures as a modeling figure in his theory of Social Learning Theory. According to Bandura, behavior could be learned by observing the performance of others or by observing other people behavior (Bandura, 1986; Franken, 2002). Social learning theory explains that there are two ways of learning by observation, those are: (1) learning by observation through vicarious conditioning, and (2) learning by observation of a modeling figure (Woolfolk, 2004).

Moreover, Rogers (1995) explained that the credibility of figures could be differentiated into: (1) competence credibility, and (2) safety credibility. Competence credibility is a credibility that has relation with status or formal position/status. On the other hand, safety credibility is a credibility that does not have relation with status or formal status.

Furthermore, in this research, the use of the media to present a credible figure in distance education was designed based on the cultural concept of a symbolic expression of the very famous Javanese proverb. The proverb is “mangan ora mangan kumpul” (Herusatoto, 2001; Roesaryanto (2012). In literally, the slogan means "eat or not eat the important is get-together or remain together". According to Herusatoto (2001), the symbolic expression described how strong the sense of togetherness. Therefore, the media was designed to accommodate the togetherness of distance education students to listen to the presentation of the charismatic and credible figure.

The research also based on Bloomberg explanation about learning community. Bloomberg (2007) mentioned that learning community could be a catalisator or motivator for learning, and could support a learning group to maintain the learning process. In other words, the communicator characteristics, such as authority, credibilty, and attractiveness, can function as catalisator or motivator. Interaction through videoconference in Bloomberg' research showed that there was interaction occurred in social culture context which improved the learning process among students.

Research Methods

As a research and development research, the research used mixed methods. First phase was designing and developing a media prototype, and second phase was trying out the media prototype that was developed.

The research was conducted in the Universities Terbuka (UT) which is an Indonesia instution that uses distance education system.

Population and Sampel of Media Prototype Try Out

As a development research, the main topic of media prototype was choosen by criterions as follows:

- A course of a study program which has a lot of students.
- A topic from an introductory course.
- Has a high credibility academic figure who has a national reputation.

Based on that criterions, the course that was developed is an Introduction about Library from Library Diploma Study Program which had 32.000 students out of 600.000 students in 2011 (data from Biro Administrasi Akademik dan Pelayanan Mahasiswa or Academic Administration Biro – UT, 2011). The students were also the population of the study.

The sample of media prototype try out were about 600 new students, from Unit Program Belajar Jarak Jauh (UPBJJ) or Bandung regional office of UT, who were attending the orientation program on September 8, 2012. They were provided with questionnaires after they attended ubiquitous public lecture from the charismatic academic figure in the regional office of UT.

The Research Results and Discussion

The results of the research were as follow:

1. The u-learning media prototype was successfully developed in this research. The prototype was a model of learning media prototype of a lecture-based ubiquitous learning (u-learning) or multi studio-based learning which could provide an enlightenment from the charismatic figures that also allow asynchronous learning. The charismatic figure who delivered the academic public lecture in the media prototype was Prof. Sulisty Basuki, Ph. D. He is one of the very few professor in librarian science in Indonesia which also become the reasons of why the researchers decided to choose him as the credibility and charismatic figure.

2. Quantitatively, 150 questionnaires were given randomly to the about 600 new student students that came to the UT's regional office (that was Bandung Regional Office). About 100 questionnaires were returned by the students. The result of the questionnaires that provided to the students in the orientation activities in the Bandung Regional Office shows that all the responses students responded positively. The respond of the students about the media performance quality were as follow: 71.13% of the students who answered good, while the students who answered good for the layout of the media are 68.25%, and the students who answered good for the public lectures systematics are 70.38%;
3. Qualitatively, the results of observations about the u-learning public lecture found that the lecture was useful and accepted by the new students but not for the students of the last semester, that were semester 3 and 4 who came to the main office in UT. The reason might be explained by the need of knowledge or the content of information in the public lecture. For the new students, the content of the public lecture is important for them. It was shown at the location of the research, that was in the regional office. The new students were paying attention to the charismatic public figure who gave a virtual lecture and were taking notes during the u-learning lecture. On the contrary, for the last year students, the content of the lecture were a knowledge that they were already knew and they did not need it anymore. Moreover, the media prototype that was developed should also consider where it would be used. For example, the use of media in remote areas should consider on the availability of electrical appliances and other technical equipment.

The results of the research showed interesting reseach findings that u-learning in Indonesia culture could be modiflicated into different situation. U-learning which in the other culture is used as a lecture that distance education students could open it by themselves everywhere (example in their room, car and etc), but it could be modiflicated in Indonesia culture where people like to gathering and where the technology is still limited. The results of the research show us that distance education students were able to follow the lecture even they only met virtually and were not met the public figure physically. The research result proved the explanation by Bloomberg (2007) that learning community could be a catalisator or motivator for learning, and could support a learning group to maintain the learning process. Moreover, distance education institution could use the u-learning media for distance education students.

The important thing to be noted is that the public lecture for distance education students in the media should be designed as a public lecture that usually is designed for face to face lecture. The u-learning public lecture should also be designed for the expert who has credibility, charismatic, academic authority, and who could become modeling figure as mentioned by Bandura (1986), Franken (2002), Jones & Jo (2004), Park (2010), Perloff (2010), Rogers (1995), and Woolfolk (2004).

The research results show us that practising u-learning for distance education students could be based on the culture where the technology is still limited. In this case, practicing u-learning in Indonesia culture could be successfully adopted by consider how people in Indonesia like to gather in the community.

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DETERMINANT FACTORS OF STUDENTS PARTICIPATING IN ONLINE EXAMINATION

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Abstract

The purpose of the study is to discover determinant factors of students' participation in online examination. Some factors related to participation behavior were deducted from the expectancy-value paradigm. Such factors were then verified by comparison between participating and nonparticipating students in online examinations. In addition, the students' personal data were also used for identifying determinant factors in students' participation in online examinations. The population was students of Universitas Terbuka registered in the Bengkulu Regional Office and the sample was 187 students consisting of 99 participating and 88 nonparticipating students. The data were analyzed using some statistical tools for comparison between the two groups of participating and nonparticipating students. The results showed that the five factors were differentiated between participants and nonparticipant group, i.e.: (1) self efficacy in using computers ($t=12.81$, $p<0.01$), (2) perceived of easiness in operating an online examination ($t=9.51$, $p<0.01$), (3) perceived of the importance of online examination ($t=5.58$, $t<0.01$), (4) intrinsic value of online examination ($t=10.58$, $p<0.001$), and (5) cost of online examination ($t=-2.05$, $p=0.029$). In addition, the following students' personal factors were also compared and the results were (1) age ($t=-2.01$, $p=0.46$), (2) grade point average ($t=-5.546$, $0<0.01$), (3) sex ($\chi^2=28.51$, $p<0.01$), and (4) marital status ($\chi^2=6.50$, $p=0.011$). The results concluded that the expectancy and value theory was useful for explaining and predicting students' participation in online examinations and student personal factors such as grade point average and sex were attributed to students' participation.

Keywords: Expectancy-value theory, online examination, determinant factors

Introduction

The success of students in open and distance learning (ODL) environments is centered around in their own self-directed learning readiness. Therefore, the success of ODL institutions was highlighted in facilitating and disseminating the flexible and open learning resources to the students such that they, as the self-directed learners, could utilize easily the resources. The online examination is considered as a learning resource which is more open and flexible for students to use than conventional examination using paper and pencil. In order to maintain openness, ODL institutions are urged to provide the online examination services, as explained by Khare and Lam (2008) that the issue of online examination for distant learners can no longer be ignored or indefinitely postponed. In line with that requirement, Universitas Terbuka (UT) has launched the online examination in 2010, by increasing participants from 332 the first semester of 2010 to 2293 in the second semester of 2012 (Sapriati & Pardede, 2015). Bengkulu Regional Office of UT has begun to run the online examination in 2012. In the first semester of 2015, the number of students participating in the online examination was 1239 students or about 30% of the total number of students in the educational program for non-teacher in Bengkulu Province. One of the duties of Regional Office of UT is to promote learning resources, including the online examination, to the students. To promote the available learning resources, it is necessary to recognize all aspects related to students' barriers and opportunities to adopt the online examination.

Objectives of the Study and Research Questions

The objective of the study was to analyze some factors contributing to students' participation in online examination. The factors analyzed in the study were deducted from expectancy-value theory, i.e.: easiness, self-confidence, importance, intrinsic value, and cost. In addition, personal factors such as age, sex, marital status, work status, and grade point average were also analyzed to reveal the roles in students' participation in the online examination.

To achieve the above study objectives, the following research questions were formulated:

1. Do the factors of easiness, self-confidence, importance, intrinsic value, and cost attributed to the online examination have differentiated the participating and non participating students in the online examination?
2. Do the students personal factors of age, sex, marital status, and GPA have discriminated the participating and nonparticipating students in the online examination?

Expectancy Value Theory

The expectancy-value theory of motivation is grounded in the claim that individuals choose behaviors based on the outcomes they expect and the values they ascribe to those expected outcomes (Panchal, Adesope, & Malak, 2012). In other words, the expectancy value theory hypothesizes that students' motivation for participating in online examination depends on perceptions about the odds of success and the value of completing that learning resources. In general, the expectancy-value theory could be put in this mathematical formula: $\text{Motivation (M)} = \text{Expectancy for Success in a Task} \times \text{Subjective Task Value}$. The degree of expectancy for success and value of online examination will contribute to the degree of motivation in participating in the online examination.

Expectancy for success depends on the confidence of the individuals have in their abilities and on the individual estimations of the difficulty of the task (Eccles, 2005). In the online examination, the individual self-confidence is associated with conviction in using computers for the online examination. Therefore, the first factor reported in this study was student self-confidence in using computers for the online examination. In most of the situations, self-confidence is not related directly with the easiness. Self-confidence is linked to personal abilities, while easiness is much more connected to the efforts needed to accomplish the task. If a task is considered as an easy one, then it means that the task does not need much work. Hence, the second factor in this study was the easiness in doing the online examination. In conclusion, expectancy for success in this study was focused on two factors, i.e. self-confidence in using computers and easiness in doing the online examination.

According to Panchal, Adesope, & Malak (2012), value has four components: (1) attainment value, (2) intrinsic value, (3) utility value, and (4) cost. The attainment value is related to a personal importance of doing well on the task. The intrinsic value is associated with an enjoyment that an individual derives from performing the activity. The utility value is tied with how well a task relates to current and future goals. The cost is linked to the negative aspects of engaging in a task.

The students surely expect a good grade in examination results, whether it is an online or a paper and pencil examination. The students know certainly that the examination results are not relying on the mode of examination, but it depends on the learning process before they do an examination. Therefore the attainment value used in this study is not related to how well the students achieve on the examination. It is almost the same with the utility value which should have related to the students' future goals, but doing an online examination is no different to paper-and-pencil examination. In this study, however, attainment value and utility value were combined in importance factor of the online examination. The importance of online examination could be related to wider opportunity for the students to have more frequent and time flexibility. Therefore, in this study, the component of values was measured by three factors, i.e.: (1) importance, (2) intrinsic value, and (3) cost. In conclusion, this

study was based on expectancy-value theory to identify the determining factor for students to participate or not in online examination and the hypothesized factors were (1) self-confidence in using computers, (2) perceived easiness in doing online examination, (3) importance of online examination, (4) intrinsic value of online examination, and (5) cost.

Methodology

The population was students of Universitas Terbuka registered in the Bengkulu Regional Office and the sample was 187 students consisting of 99 participating and 88 nonparticipating students. The underlying hypotheses were that the participating student group scored higher than the nonparticipating group in variables of self confidence, perceived easiness, importance, intrinsic value, and cost of the online examination. The instrument for measuring those variables was the Likert scale with a reliability of alpha Cronbach equal to 0.897. The data were taken in first semester of 2015 in Bengkulu Province. The data analysis used t-test for group comparison between participant and non participant students in those variables as well as data of age and GPA. The additional data by sex and marital status was compared by chi-square test.

Results

The Individual Characteristic Factors

The characteristics of the sample were described in Table 1. The number of students in the participating group was 99 and in the nonparticipating group was 88. Participating group was slightly dominated by male (57%) in contrast to nonparticipating group which was dominated by female (63.8%). The number of married students in the participating group (43.5%) was less than the number of married students in the nonparticipating group (56.5%). The participating group students tended to be younger than the nonparticipating students, i.e. 28.12 and 30.75 on average. Surprisingly, the GPA average of the participating group students (2.67) was considerably less than the nonparticipating group students (3.03).

Table 1: Description of Sample Characteristics

Characteristics	Participating Group	Nonparticipating Group	Total
Number of students	99	88	197
Sex:			
• Female	42 (37.2%)	71 (63.8%)	113 (100.0%)
• Male	57 (77.0%)	17 (23.0%)	74 (100.0%)
Marital Status:			
• Married	40 (43.5%)	52 (56.5%)	92 (100.0%)
• Unmarried	59 (62.1%)	36 (37.9%)	95 (100.0%)
Age:			
• Mean	28.12	30.75	29.36
• Std. Dev.	7.504	10.015	8.850
GPA:			
• Mean	2.67	3.03	2.85
• Std. Dev.	0.55	0.25	0.47

Difference in student personal characteristics, i.e. sex, marital status, age, and GPA, between the participant group and the nonparticipant group was shown in Table 1. These differences should be tested statistically to conclude whether the differences were related to the chance of fluctuating sample or because of sample coming from different populations. The statistical tests were shown in Table 2.

Table 2: Group Comparison Test Between Nonparticipants (n = 88) and Participants (n = 99) of Students' Characteristics

Variables	Statistical Tests	Statistic Values
Sex	Chi-Square test	6.509*
Marital Status	Chi-Square test	28.516**
Age	t-test	.905
GPA	t-test	5.546**

*) level of significance = 0.05

**) level of significance = 0.01

It was shown in the Table 2 that only age was not significantly different between the participant and nonparticipant groups. In other words, the difference in age showed in the Table 1 was not attributed to the differences in the population but it was because of the fluctuating samples. On the other hand, sex, marital status, and GPA were differentiated between the participant and nonparticipant groups. This mean that sex, marital status, and GPA is related to students' behavior to participate or not in online examination. In the Table 1, male students, compared to female students, tended to participate more in online examination. Furthermore, unmarried students have a higher tendency to participate in online examination compared to married students. The students with lower GPAs tended astonishingly to participate in online examination. The explanation for this last finding was that one of the reasons for the students participating in the online examination was because they had experience with unsatisfied results in paper-and-pencil test. They needed more frequent examinations and tried to get a new expectation and luck with the online examination. In general, it could be concluded that student personal characteristics, i.e. male, unmarried, and low GPA tend to participate in the online examination. In other words, sex, marital status, and GPA were the determinant factor for student participating in the online examination.

The Expectancy-Value Factors

Score description of the five factors deducted from expectancy-value theory consisted of easiness, self-confidence, importance, intrinsic value, and cost were shown in the Table 3. The mean and median was calculated from the score, which was valued between 1to 5 on a rating scale. The comparison of factors variables between the participating and nonparticipating student groups was appeared in Figure 2.

Table 3: Description of Factor Variables

Factor Variables	Nonparticipating (n = 88)		Participating (n = 99)		Total (n = 187)	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
Easiness	2.290	1.0303	4.020	.7822	3.206	1.2526
Self-confidence	2.830	.8274	3.929	.7427	3.412	.9559
Importance	2.943	.4576	3.419	.6951	3.195	.6397
Intrinsic Value	2.767	.8406	3.990	.7353	3.414	.9950
Cost	2.960	1.1173	3.303	.9944	3.142	1.0651

The easiness factor was the student perception of the relatively effortless situation in participating on the online examination. The easiness here was not related to examination substances, but it was related to technical matters during the online examination. The nonparticipating group had a mean of 2.290 less than 4,020 for the participating group. In the Table 4, it was revealed that the difference was significant at level 0.01. The effect size of Cohen's d was 1.92 indicating that the effect of easiness factor for participation in online examination was very strong. It could be concluded that the easiness factor differed between participant and nonparticipant group. In other words, student perception of easiness in doing the online examination was the determinant factor of students participating in online examination.

Self-confidence was the factor for rating their ability in using the computer in the online examination. The self-confidence factor was not directly related to easiness. Students that felt difficulty in using the computer in the online examination would be self-confidence if they had known that the UT's staff would give technical assistance in operating the computer in the online examination. The mean for the self-confidence of nonparticipating group was 2.830 and it was less than mean for the participating group (3.929). The mean difference in the two groups was significant at the level of 0.01, as could be seen on the Table 4. An effect size of self-confidence to participate in online examination was 1.40 indicating there was a very strong effect. This means that the self-confidence was a differing factor between participating students and nonparticipating students in the online examination. Therefore, the self-confidence was the determinant factor of students participating in online examination.

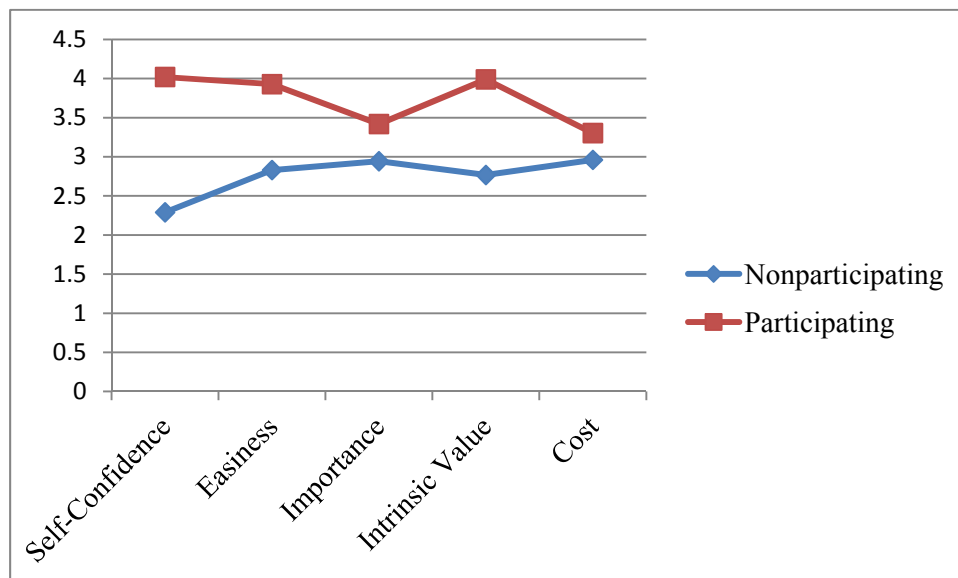


Figure 1: Comparison between participating and nonparticipating student groups

The importance factor was referred to the worth of the online examination to the students. The importance of the online examination could be linked to the online examination as an alternative to the conventional paper-and-pencil examination. In this case, the importance of the online examination was attributed to the frequency of times the examination was taken and the quick time in which the students received their results. In UT's conventional examination, the results of the examination are known after about 40 days from the last day of the examination period, therefore, the quick results of the examination shows the importance of the online examination so the students can plan their courses for the following semesters. As could be predicted, the nonparticipating student group had a mean score less than the mean score of the participating student group, i.e. 2.943 and 3.419. This mean difference was significant at level 0.01. The effect size of importance factor to participate in online examination was very strong indicated by effect size 0.82. This mean score of the factor of importance was discriminating between participant and nonparticipant group. In other words, the factor of importance was the determinant factor of students participating in online examination.

Table 4: Factor Variables Comparison (t-test) of between Nonparticipants (n=88) and Participants (n=99)

Variables	t-values	Effect Size (Cohen's d)
Easiness	-12.811**	1.92
Self-confidence	-9.518**	1.40
Importance	-5.587**	0.82
Intrinsic Value	-10.528**	1.56
Cost	-2.205*	0.33

*) level of significance = 0.05

**) level of significance = 0.01

Intrinsic value was a student's value toward the online examination, regardless the importance and ease of the online examination. The intrinsic value could be attributed to a novelty. The novelty effects of computer and information technology to the online examination could be a drive for the students to try it. The example of how a student interested in trying the online examination because of the novelty effect can be read in a blog written by a student (NatinBali, 2013) who stated that she wanted to get a new experience by registering for an online examination. The attraction to the online examination like NatinBali (2013) was owned mainly by the participating student group which was indicated by the mean score of 3.990 compared to 2,767 for the nonparticipating student group, as could see in Table 3. In Table 4, the mean difference between the two groups was significant at the significance level of 0.01. The Cohen's d or effect size of the intrinsic value factor was 1.56 indicating that there was a very strong effect of intrinsic value factor to students' participation in online examination. Therefore, it could be concluded that student perception of the intrinsic value of the online examination was the determinant factor of the students choosing to participate or not in the online examination.

Cost was including all student efforts, financial or nonfinancial, to carry out the online examination, which included time, money, and opportunity. At this time, the online examination is only held in the regional office of UT which is located in the capital city of the province. The Bengkulu City is the capital of the Bengkulu province. For example, the students come from Muko-Muko regency have to drive seven hours to reach the capital city of Bengkulu province. The score to the cost factor was a rating scale of 1 to 5. For the calculation in Table 3, the score was converted to the opposite to get positive values, so that the score of 1 become 5, 2 to 4, 4 to 2, 5 to 1. Therefore, the highest score on the cost factor was indicated that the students have fewer problems regarding the cost factor. Table 3 showed the mean score of cost factor for participating student group was 3.303 compared to 2.960 for the student nonparticipating group. The difference was not quite considerable, but it was still significant for the significance level 0.05. The effect size of cost factor was 0.33 indicating a moderate effect. Therefore, it could be concluded that the cost factor was a determinant factor, though moderately, for differing the student participating and nonparticipating in the online examination.

Discussions

The study results had shown that expectancy-value paradigm described accurately about students' participation in online examination in the Bengkulu Regional Office of Universitas Terbuka. In this study, all factors deducted from expectancy-value theory had been verified as determinant factors for students participating in online examination in Bengkulu Regional Office of Universitas Terbuka. The study results were in line with other studies applying expectancy-value theory. For example, Panchal, Adesope, & Malak (2012) has succeeded in applying the expectancy-value theory for developing an e-learning project and the students were motivated to use it. Andrusik (2011) studied the contribution of the expectancy-value theory to reading achievement of African American Adolescent and

concluded that all motivation constructs inferred from expectancy-value theory were the significant predictors of reading achievement of African American adolescents.

Conclusion and Recommendation

The factors derived from the expectancy-value theory in this study, i.e. easiness, self-confidence, importance, intrinsic value, and cost were the determinant factor of the students registered in the Bengkulu Regional Office of Universitas Terbuka to participate in the online examination. In addition, sex, marital status, and GPA were also contributing to the student for participating or not in the online examination.

It is recommended to developer of learning resources for the students of ODL that all the learning resources should be developed and evaluated with students' expectancy-value in mind. The following factors should be noticed, i.e. easiness, students' ability, importance in the students' view, possible students' intrinsic values, and cost. In particular, to increase student participation in online examination in Universitas Terbuka, it is recommended to consider some student activities which could enhance the expectancy-value toward online examination. For instance, in orientation of study for new students, the students could be experiencing the online examination and discussed the easiness and importance for them.

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FAQ ON UT ONLINE COMMUNITY FORUM

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Abstract

Frequently Asked Questions (FAQ) is an assemblage of questions about a specific topic, that is often put forward users and the answer to this question. Based on the prototype FAQ of Faculty of Social and Political Sciences Online Community Forum the research conducted by Windrati, Nurhayati and Sutartono in 2011 and 2012, Windrati, Nurhayati and Sutartono conducts advanced research against online community forum in all that is on a course of studies for undergraduate Faculty of Economy, Faculty of Mathematics and Natural Sciences, and Faculty of Education and Teacher Training. Advanced research is done because researchers see variety of the same question posed by students Faculty of Social and Political Sciences, Faculty of Economy, Faculty of Mathematics and Natural Sciences, and Faculty of Education and Teacher Training, namely a question related to problems with the registration (registration schedule, registration fees, transfer of credit), learning process (tutorial, teaching materials), and test/evaluation (test schedules, test center, exam, online exam, Finale Task Programme, test participants identification cards, test scores).

Key words: Online Community Forum, FAQ

Introduction

Efficiency factor was the reason for the Windrati, Nurhayati and Sutartono develop the prototype *Frequently Asked Questions* (FAQ) for Open University of Indonesia/Universitas Terbuka (UT) Online Community Forum which managed by The Faculty of Social and Political Sciences in 2011. The result of developing the prototype significant, because it can overcome the problems of efficiency that have been faced by the management UT Online Community Forum which managed by Faculty of Social and Political Sciences in answering questions submitted by the students (Windrati, 2012).

In UT, Besides UT Online Community Forum that managed by Faculty Of Social and Political Sciences, there are also UT Online Community Forum that managed by 3 other faculties which are Faculty of Economics, Faculty Of Mathematic and Natural Sciences, Faculty Of Education and Teacher Training. UT Online Community Forum managed by 3 faculties has some equal characteristic to UT Online Community Forum managed by Faculty of Social and Political Science. That equation among others is apparent from the side of the formats. The format UT Online Community Forum that managed by four faculties shaped discussion forum that allows students are doing a discussion or integration with the management related to academic administration problems they face. Besides, format provisions use UT Online Community Forum also have in common are as follows

“FORUM INI DITUJUKAN UNTUK KOMUNITAS UT ONLINE (MAHASISWA & STAF). Jika pengguna ingin memposting masalah mohon untuk memperhatikan posting terdahulu agar tidak terlalu menyebar dan dapat cepat ditanggapi. Harap tidak memposting materi yang sama pada banyak forum. **Dilarang membuat posting yang tidak berhubungan dengan kegiatan akademis.** TERIMA KASIH NOC-UT” (<http://student.ut.ac.id/mod/forum/view.php?id=59967>)

Utilization of the community provisions UT Online Community Forum they seemed not everyone obeyed by participants in the discussion. Of the fact that from the results of research conducted writer on UT online community forum managed Faculty of Social and Political Sciences obtained data that many topics/discussion questions that in nature same delivered on a post different so problems arise efficiency of the management in response to material/discussion questions at the forum. This clearly does not preclude the likelihood of occurring at UT Online Community Forum sponsored by 3 other faculties. Because of it, the author of then interested to test the prototype of the faq have been developed on the object wider namely Faculty of Social and Political Sciences, Faculty of Economic, Faculty of Mathematic and Natural Sciences, and Faculty of Education and Teacher Training. But, tried out before the prototype of the FAQ, and first performed the matter and up to date FAQ, so it becomes workable model related to four faculties.

Methods used in the trial is a method of research and development, namely research method used to develop a new product or products that there have been perfected, which begins with the needs and problems need solving with a certain products and then tested of the effectiveness of these products (http://file.upi.edu/Direktori/FIP/JUR._PEND._LUAR_BIASA/196005051986032-JUHANAINI/Presentasi_Research_and_Development.pdf , 2012).

The stage made in the trial is: first, the prototype FAQ have been developed before by conducting: a). Evaluation to see whether material answer in FAQ still in accordance with latest UT regulation; b). The prototype of the FAQ for the management of UT online community forum at 4 faculties; c). Focus group discussion (FGD) with the management of UT online community forum at 4 faculties and related units; d). Repair and furnish the prototype FAQ which has been developed based on the 4 women with the faculty and related units. The second, the trial of the implementation of FAQ, with steps: a). The trial (experiment) program to each party the management of UT Online Community Forum; b). Improve the program based on the results of experiments.

Result and Discussion

In chapter discussion was delivered about how the consummation of the prototype FAQ that has been developed previous up to be a model which can be used by the management FAQ of 4 the faculties of existing in UT, as well as the result of the experiment FAQ for measuring the efficiency of the FAQ model developed.

Completion of FAQ Prototype

The perfecting FAQ which have previously been developed by the writer intended to this will be the prototype of some kind of model that can be used by the management UT Online Community Forum of 4 the faculties at UT in answer to question students in an efficient way . FAQ own can be defined as an assemblage of questions that are frequently put forward by the user and the answer (<http://www.tukab.go.id/modules.php?name=FAQ>). Through this FAQ someone can know the questions often submitted to certain parties who developed the FAQ, so the developer FAQ no longer need to give an answer for the same question. This feature usually mounted on a website.

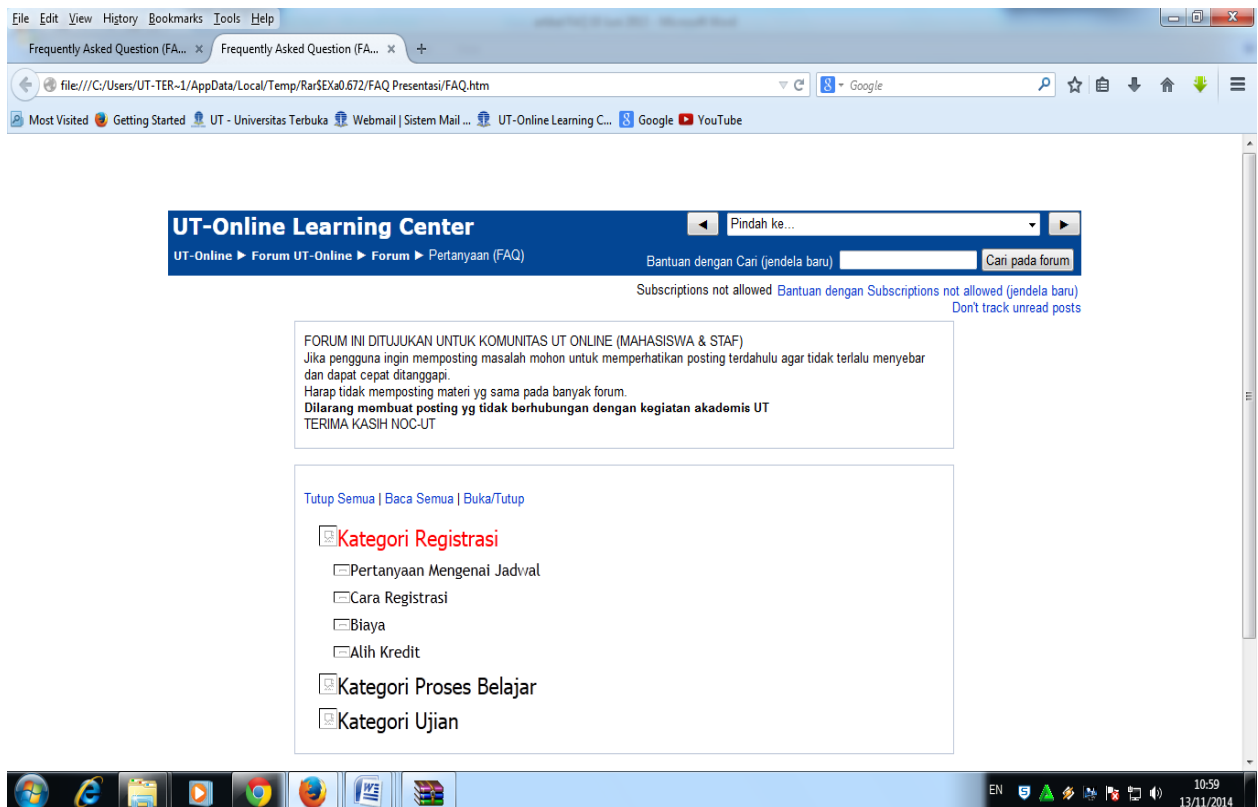
At the FAQ have to develop those author of community forum involving the management of their faculty to provide feedback about the FAQ model which can be used by each school. This activity is conducted through FGD. He was asked to give their input on the FAQ model, the management also asked to give their input on the topic of questions and answers to be loaded at the FAQ, nature can accommodate the needs of 4 faculties.

Relating to the appearance of a model FAQ, the result of FGD shows that 4 faculties agreed that the display of FAQ prototype of which has been developed not previously need to make the change and is committed to using the appearance of existing. The following example how it looks.

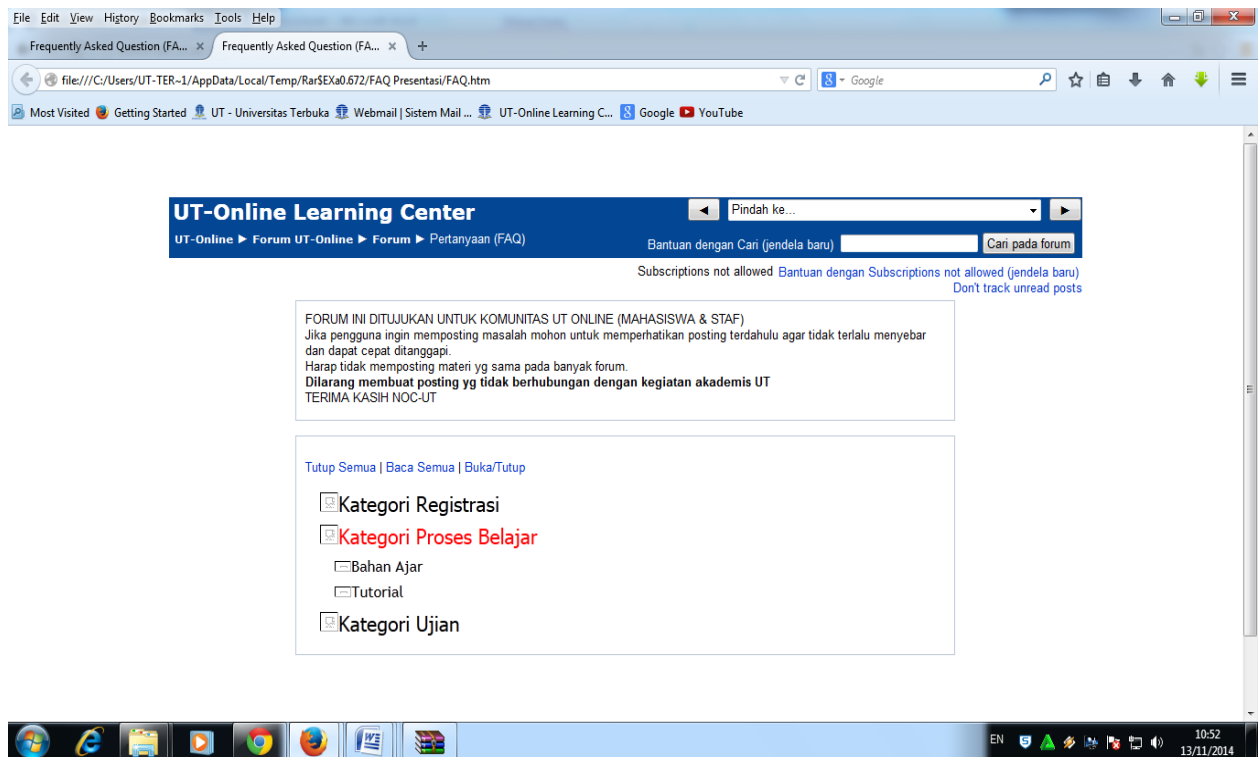
1. Cover



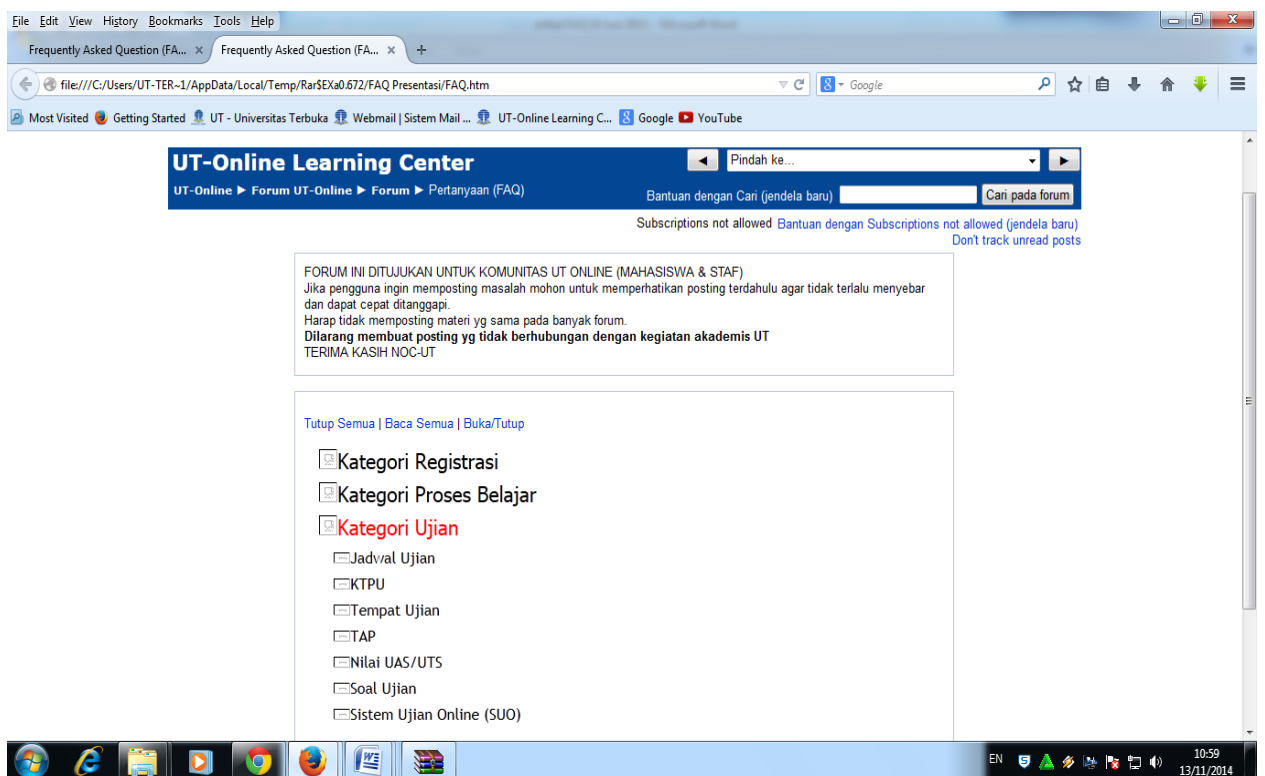
2. Registration



3. Learning Process



4. Test/Evaluation



As from the side of content, the management of 4 faculties agreed that the topic discussed in FAQ shall be general in nature, it means can be used by all students from 4 faculties. Hence, which are special topics of previously existed FAQ in politics to be eliminated, such as topics, which discusses the program translation and block the transfer system as, because each has a provision of a course of study singly on number and type of course that can be transferred.

In addition to change and eliminate some of the topics discussed earlier, is also improving some answers to the question in FAQ who had a change because the new policy at UT, so that they are always FAQ on condition of up to date. In several policy changes that need of improvement in some content in FAQ is on the registration system that has changed with the use of billing system. In addition, the online tutorials also changed policy. At first, online tutorial held only for certain course, while the new policy determine that all course being taught this time. The change also occurred in policy following the task of finale task programme (TAP) which originally followed the requirements of the finale task programmeis n-19 semester credit system, have turned into n-35 semester credit system (n = the number of total credits).

Efficiency at the FAQ The Implementation of UT Online Community Forum

After the completion of FAQ which has developed earlier, then conducted the trial to see the efficiency of the model developed. Efficiency is measured using variable speed time used the management in answering questions, and involvement of other units in answering questions. The research findings related to the efficiency of the model developed can be seen in table 1.

Table 1: Effisiensi FAQ Model
N = 5

No	Efficiency FAQ Model	Category	Σ	%
1	Time used the management in answer to questions	old ones	0	0%
		middle	0	0%
		A few	5	100%
2	Another unit involvement in answering questions	often	1	20%
		middle	2	40%
		seldom	2	40%

Of the results of pilot model obtained the material information that time used the management in answer to question students become more a minute after developed FAQ model, because they need no longer to write the answers related to student question who has been summarized in the model FAQ. While for the involvement of other units, some respondents said that they sometimes still requires the involvement of other units due to the policy of UT nature dynamic. It is understandable because during this model developed writer also met several times happened change of policy associated with the questions from students, so that the revision needs to be against FAQ which has developed earlier.

Closing

Based on observations on the website several major Indonesian universities, both public and private college, at the time article is written, the author had not seen the program FAQ website that listed in their college. If we see some websites college in other countries, this program in their FAQ publish college website concerned. As college with a system of distance education, UT see FAQ the development program and realize the importance of this because in addition to as a means of communicating information to the need information about UT, this also facilitate and accelerate FAQ students to obtain the answers they need.

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ARE SOCIAL NETWORKING SITES USEFUL FOR ACADEMIC PURPOSE? A COMPARATIVE STUDY ON THE PERCEPTION OF E-LEARNERS AND FRESHMEN AT CONVENTIONAL INSTITUTES

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Abstract

E-learning is growing as an advance mode of education in developing countries like Pakistan. Students from this mode of education are well familiar with social networking sites and their usability as they have an organized online community groups for online knowledge sharing. On contrary, students' from conventional mode are also familiar with social networking sites but their usage in terms of academic usability is still not clear as majority use these sites for leisure time activities. In this regard, present study is aimed at comparing the academic usability of social networking sites in e-learning and conventional mode. Focus of the study was on measuring students' perception regarding usability of these sites in learning process. The main objectives of the present study is to find out the perceived impact of using social networking sites on knowledge sharing and assessing the possible facilitation provided by social networking sites. A questionnaire containing close-ended questions on five-point Likert Scale was deployed as data collection tool from 40 students of e-learning mode and 40 students of conventional mode. Alpha coefficient was also determined to indicate the internal consistency of the questionnaire. Findings of the study suggest that e-learners differ in their perception of academic use of social networking sites from freshmen graduates. On the basis of findings, it can be suggested that conventional learners are need to introduce with the possible potential usage of social networking sites for academic usage so that technology along with innovation can be used as a useful mechanism for students learning.

Keywords: Social networking sites, E-learners, freshmen, academic purpose

Introduction

The advent of Information and Communication Technologies has very progressively leaded our lives towards digital transformation. This transformation has not only captured human life spheres holistically but also affected the course of human interaction. Conventional mode of interaction has been transformed through communication gadgets and tools (Paulus & Scherff, 2008). Now communication is not just limited to the physical interaction or telephonic talk, it means more than that, ICTs has offered a variety of prospects of interaction and sharing to the individuals that include chatting, sharing videos and photos, chit chat in common interest groups and providing personal updates as well as giving opinions on social happenings (Hinduja & Patchin, 2008; Lampe, Ellison, & Steinfield, 2008).

ICT phenomenon has become a free of charge facilitation mechanic for individuals in every walk of life. Use of social networking sites (SNSs) is also an outcome of such digital transformation. This revolution of digital world has drastically change every aspect of life covering day to day interaction to educate the youth and building network of professionals such as LinkedIn that connects thousands of professionals around the globe. Other social networking sites such as twitter, facebook, frienstera and my space are also getting popularity and have successfully created their space in electronic community of different age group people. As stated, these social networking sites are not just limited to the interaction and sharing, it can serve as potential useful platform for information sharing and creating knowledge based online communities (Educause Learning Initiative, 2007).

It is a common assertion that in contemporary world, social networking sites have implanted in cultures scrupulously. In order to maintain personal and professional relation people are now frequently using face book, twitter etc. (Trubitt and Overholtzer (2009). Use of social networking sites to establish a relationship with students is identified an important effectual tool for teachers by few researchers so Kosik (2007) emphasized on seeing the possible use of these sites in education sector. In this context of usage, Brady, Holcomb and Smith (2010) described educational networking as “the use of social networking technologies for educational purposes.” And Minocha (2009) also emphasized on “the use of social networking technologies for educational purposes, to line up innovative and collaborative technology”.

Study report by Lashinsky (2005) recognized face book an important platform for academic communities as compared to Mysace, Friendster or twitter. The case examples also support the fact that in USA about eight million students of 2000 colleges and 22,000 high schools use face book for academic purposes. It is cited as seventh most trafficked website. As an alternative tool in online system it can also provide an opportunity to the students to interact with teacher if they feel comfortable and necessary. At this platform they are no more restricted to strict virtual environment rather connect socially and educationally in comfortable manner to share information with each other and create intimacy (Educause Learning Initiative, 2007).

Allen & Seaman (2007) reported that in distance education mode 9.7% growth rate was observed for college and university students at higher education level and still exceeding 1.5% annually. This growth in academic user of social networking sites is persistent with the global usage of these sites (Ellison, 2007). With three hundred million active users face book is categorized as fastest and most often used website around the world (Roberts, 2010). Few researchers also work on the role of social groups in these sites, in this regard their results reported that those e-learning courses run more successfully where teachers and students have developed communities and encourage high level of presence from both users and teachers (Barab& Duffy, 2000; DeSchryver, Mishra, Koehler, & Francis, 2009).

Buffardi and Campbell (2008) stated that social networking sites are tools of communication and marketing strategies for universities. Such websites are used to communicate with students, faculty and alumni about school news via these platforms. At school level, fifty percent of the students use these social networking sites to discuss their school work whereas at higher educational level 60% students use these platforms to generate educational debate. In this regard NING is reported as mostly used social networking sites to facilitate students in groups (Ellison, 2007). Moreover at some institutes these social networking sites are used to supports students in attempting their assignments, completing school work, class discussion topics and video sharing (Klopfer, Osterweil, Groff and Haas, 2009).

Students also report the effectiveness of these social networking sites in more positive way as compared to faculty. Students are more comfortable in using these SNSs and collaborative classrooms (Roblyer et al., 2010). They found it as supportive instrument towards class room work and home assignments. Considering the fact that large number of students are frequent user of social networking sites, its potential usage in educational discussion and groups can be effective (Shier 2005).

In conventional institutes, though many educators assume these SNSs can be used for academic purposes but majority is of the view that these sites can disengage students from the proper learning and may divert their attention (Dempsey, O'Neill & Brabazon, 2007). Few researchers also highlighted privacy issue that may adversely impact on student and teacher relationship as well (Sickler, 2007). Study conducted by Karpinski and Duberstein (2009) reported that students who spend more time on face book give less time to their studies and their results show poor CGPAs. However, another study reported that a positive correlation is found between face book usage and good grades but it is conditioned with students' aptitude towards using of these sites in convenient manner (National School Boards Association, 2007).

The way social networking sites users are reported establish the fact that in distant and e-learning mode it is being used for academic purposes but still its usage and purposefulness is not clear for conventional institutes. Keeping in mind this difference and limited literature on the users of conventional institutes, this study aims at measuring the effectiveness of SNSs in academic endeavors of e-learners and conventional graduate students. The main purpose is to measure the academic usability of social networking sites in e-learning and conventional mode in our indigenous culture of Pakistan. Focus is on measuring students' perception regarding usability of these sites in learning process of Virtual university of Pakistan (E-learning institute) and Government College Lahore, Pakistan (Conventional mode).

Objectives

Following are the main objectives of the study:

- To explore whether the e-learners and conventional learners differ in their perception regarding use of SNSs for knowledge sharing
- To find out the differentiation in perception of e-learners and conventional learners regarding use of SNSs for the learning through resource sharing
- To discover how the e-learners and conventional learners differ in their perception regarding enhancement of different skills through SNSs

Hypothesis

It was hypothesized that:

- The e-learners and conventional learners differ in their perception regarding use of SNSs for knowledge sharing
- The e-learners and conventional learners differ regarding use of SNSs for the learning through resource sharing
- The e-learners and conventional learners differ in their perception regarding enhancement of different skills through SNSs

Method and Procedure

This study is quantitative in nature. A survey from 80 students was conducted regarding academic usability of social networking sites, out of which 40 students/learners were enrolled in e-learning mode of Virtual University of Pakistan and 40 students were approached at Government College University Lahore. Students were approached on the basis of convenience and were ensured that study is solely conducted for academic purpose and acquired information will not be used for other purposes. A close ended questionnaire was deployed as a tool of data collection and Chronbach Alpha of each dimension was measured in order to ensure internal consistency of the scale. The internal consistency of the scale is .867 that is significantly high. The reliability of all sub-dimensions was also found satisfactory. The main dimensions focused were perceived impact of using social networking sites on knowledge sharing and assessing the possible facilitation provided by social networking sites in learning process as well as development of social skills among users. The reliability of first dimension knowledge sharing was .860, reliability of second dimension facilitation in learning process through resource sharing was .871, and third dimension enhancement of different skills had reliability of .818. For data analysis purposes, descriptive statistics and independent sample t-test were applied.

Results

Findings of the survey describes that all the respondents (e-learner and freshmen) were graduate level students. Mean age of respondents was 22.39 years. 70% of the respondents were male and 30% were females. All of the respondents report that they are the frequent users of Facebook and rest of sites were not identified by them. About 60 % of the respondents were accessing face book several time in a day, 16.3 % used these sites at least once in a day, 11.3 seldom accessed these sites whereas 12% respondents access these site one to five times in a week. Among those who use these sites. 96 % also utilized these SNSs for academic purpose whereas 04% did not consider it important for academic discussions. Those who used these sites for academic purpose, out of them 53% used these sites for general purpose and 41.3% use these sites and educational groups for assignment solving and discussion on academic issues, 3% use for exam related discussions.

Table 1: Descriptive Statistics of Dimensions

Items of Questionnaire	E-learners		Freshmen	
	Mean	Standard deviation	Mean	Standard deviation
Knowledge sharing at learning community	13.60	5.18	11.33	3.65
Facilitation in learning process	14.45	4.46	12.15	3.676
Enhancement of different skills	8.80	2.80	7.50	2.10

N = 80

Data in Table 1 explains the descriptive statistics of e-learners and freshmen about the three dimensions of the tools. Knowledge sharing at learning community is the first dimension and statistics indicate the means value of M= 13.60, M=11.33 respectively which means there is a difference between the mean value of both groups. Table also showed that there is a difference between the mean values M=14.45(e-learners), M=12.15 (freshmen) of second dimension, i.e. social networking sites facilitate the learning process. Lastly, table showed that both groups have different opinion about the idea that usage of social networking sites enhances the different skills.

Table 2: Mean, Standard Deviation, t and p Value of Educational Usage on three Dimensions of Academic Usability of SNSs

Dimensions	Types of learners	M	SD	t	p>
Knowledge sharing	E-learner	13.60	5.183	2.69	.02
	Freshmen	11.33	3.654		
Facilitation in learning process	E-learner	14.45	4.46	2.51	.01
	Freshmen	12.15	3.67		
Enhancement of different skills	E-learner	8.80	2.80	2.34	.02
	Freshmen	7.50	2.1		

Note: df =79, p>0.5

In Table 2, independent sample t-test has been computed to analyze the mean difference between the two groups, i.e. e-learners and freshmen while considering the three difference dimensions of usage of social networking sites in education. According to table, there is a significant mean difference between e-learners and freshmen regarding knowledge sharing which mean both groups have different approach regarding the usability of social networking websites as a source of knowledge sharing. In dimension two, there is a significant mean difference between the e-learning and freshmen perception that social networking websites facilitate the learning process. There is also a significant mean

difference between the e-learners and freshmen regarding that social networking site played an important role in the enhancement of different skills.

Overall table showed that all three alternative hypotheses have been accepted.

Discussion and Conclusion

The popularity of social networking sites has raised rapidly which has also been followed by a slew of services aimed at an academic audience. This social media offers multiple benefits to the educational communities specifically e-learning communities such as the provision of information about relevant online courses and opportunities to take part in group projects but the way conventional learners use and perceive it may differ. In this regard, present study was an attempt to find out the difference in academic usability of social networking sites.

Findings of the study suggest that majority of the e-learners as well as freshmen graduates use face book frequently for academic purpose. E-leaners have very positive opinion about academic use of social networking sites as it help them in building online groups for study purpose. They can have frequent interaction with their class mates to share different and novel ideas regarding studies and other recreational activities. Findings also suggest that freshmen also use these sites for academic purpose but their academic use is usually limited to the discussion on class assignments.

Descriptive statics of the study leads towards the inference that e-learners perceive use of social networking sites more convenient as it help them to share knowledge with their learning community, it helps in learning process and also facilitates to enhance their social skills whereas freshmen differ in their opinion regarding these academic usage of social networking sites. Independent Sample t-test was run to find out the mean difference; results show that on all three dimensions perception of e-learners differ from conventional graduates. All three hypotheses i.e. the e-learners and conventional learners differ in their perception regarding use of SNSs for knowledge sharing, learning through resource sharing and regarding enhancement of different skills through SNSs were accepted as the difference exists in two groups. One of the plausible reasons could be that e-learners have more familiarity and exposure of online learning spaces due to their background knowledge of e-learning as compared to freshmen graduates. Secondly, use of online resources is part of e-learners day to day routine as they use LMS and other sites in daily routine whereas freshmen have not such compulsion of use, their usage depend on their willingness as well as the type of work given by teachers as class assignment.

Enhancement of different expertise of students is another valuable aspect of using these sites for academic purpose. These skills can include study skills, how they socialize and particular technological proficiency. It may also enhance their ability to interact with others as well as improve their communication skills at macro level. Overall, highly positive perception is found among e-learners with reference to the academic usability of Social Networking sites. This platform can be more effective and can also be used effectively in conventional mode if students and teachers will be officially engaged in this activity and will also enhance its credibility and worth.

Limitations and Suggestions

These are few limitations of the study:

- In this study self-reported measure was used which may result in single source bias.
- Sample size should be increase as 80 is not a large number so the generalizability may raise question.
- In order to get more in-depth information, future researches may also use mixed methodology.

Study Implications

This study will be helpful for academicians and the researchers to understand the effective use of social networking sites in conventional mode of learning as being used in e-learning system, and its impact on students' learning. It would be helpful for policy makers in the process of introducing new innovations in the system.

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BRIDGING THE DISTANCE BY NEW FORMS OF TECHNOLOGY-SUPPORTED LEARNING. IS IT ENOUGH?

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Abstract

The Social Studies Department of the Open University of Sri Lanka has administered the B.A. Degree in Social science for the past two decades. With a generous World Bank Grant known as the Quality Innovative Grant, (QIG), two years ago, we were able to up-grade our existing B.A. Degree program and introduce a series of new subjects in keeping with the demands of the industry and the students. The use of I.M.M (interactive multi media), S.M.S. alerts, many online courses, video conferences, and a digital dictionary were some of the new technological supported learning that were introduced under this World Bank Grant. However, the students' response was not very encouraging. Instead of studying with supported teaching by using technology, most of the students used the method of, 'cut and paste' from the Wikipedia and some also opted to drop out from the degree. In order to find why this was happening, a qualitative research method, namely a focus group discussion was conducted among the visiting academics of the regional centers. According to the answers given, one of the main disadvantages of distance learning is the absence of social interaction among students who are enrolled in study programs. Unlike in the conventional universities, often students miss the privilege of social interaction with teachers and their peers. Another draw back mentioned is that distance learning is an inappropriate format for everyone though many like to enroll. Due to the limited intake in the conventional universities in Sri Lanka, without inquiring about the suitability of distant learning, a number of young people tend to enroll with the Open University as a kind of a novelty. However, not everyone is suitable for enrollment in distant programs especially if a person tends to lag behind his/her work, lacks motivation and requires individual coaching from the teacher. It is a fact that some students learn only when they are physically present in the class and assimilating all the information personally. Many visiting academics admitted that technical innovations alone were not very helpful especially to motivate students. To bridge the gap of distance, there is a need for new forms of technology-supported learning and effective distance learning instructors. However, New Technology alone is not sufficient. Finding the right solution is a daunting task for academics who use Distance Education to teach in Sri Lanka.

Introduction

Distance learning allows for a personalized learning experience with regard to the individual interests, achievement level, life circumstance and goals of each student. May be accessed from anywhere, at any time, and at any pace, in accordance with the individual needs of each student. It is an educational method that focuses on delivering classroom content/instruction to students who are not physically on site. Instead, teachers and students communicate either asynchronously (at a time of their own choosing via email or other text based communication which is also known as a print tutor), or using technology that allows them to communicate in real time (synchronously).

Many variants of distance learning include e-learning, mobile learning, and immersive learning environments. Today, distance learning is enhanced or strengthened by emerging or new forms of technologies. These technologies have been proclaimed as providing the opportunities and affordances to transform education, learning and teaching. According to (Veletsianos, 2010) emerging technologies can be correctly defined as tools, concepts, innovations and advancements that are used in diverse educational settings to serve various education related purposes. According to scholars though technological innovations and advancements definitely have brought a massive transformation in the society at large, relatively technology's impact on education, teaching, and learning is rather disappointing or limited (Bull, knezek, Roblyer, Schrum, and Thompson, 2005). Further, according to (Cuban, 2001) while expectations were high about instructional radio,

television, personal computers, computer-based instruction, the Internet, Web 2.0, e learning, m-learning, and latest state of the art equipment, have often proved disappointing. Cuban further, holds the view that “showcase” learning environments, technology supported learning that merely replicates face- to- face, teaching of day schools, seems to disengage the majority of students.

However, in looking at the advantages or the positive side of new technologies (Denise Whitelock and Terry Anderson, 2004) in their special edition of the *Journal of Interactive Media in Education*, especially in the introduction of their issue provide an overview of three affordances of the Web. The first is the capacity for powerful yet very low-cost communications. According to them, this capacity forms the platform upon which “epistemic- engagement” visions of learning are initiated. Communications may be expressed through text, voice, video, or even immersive interaction modes. Some of these communication modes can also be combined in many creative ways. Communication artifacts can be stored, indexed, tagged, harvested, searched, and stored. The second affordance mentioned by Whitelock and Anderson is that the Net creates a context that moves learners from information and content scarcity to abundance. This includes from early-learning object repositories to wide-scale distribution and production of Open Educational Resources from many networked sites, and the Net provides learning content with many different display and presentation attributes. This content exists in many formats, and often uses multimedia to enhance its presentational value. According to (Burns, 2008) most exciting is the capacity for learners and teachers to add user-created content and to edit and enhance the work of others using produsage production modes. The third affordance articulated by Whitelock and Anderson is the affordance of active and autonomous agents found in the Net, to gather, aggregate, synthesize, and filter the Net for content communications that is relevant to individual and groups of learners and teachers. According to (Ellison, Steinfield, & Lampe, 2007) Net-infused learning does not entail desertion of one’s physical spaces, but rather serves to facilitate, document, and deepen place-based communication and relationships. Mejias’ research (2005) points to the need for blended applications in which networks are used for teaching and learning when appropriate and offer particular access, time shifting, or pedagogical advantage. Looking at both sides namely advantages and disadvantages of new forms of technology one of the objectives of this research paper is to ascertain why there are considerable dropouts or an increase of incomplete student rates in the B.A. social sciences offered by the department of social science even after introducing innovative changes by using technology which benefit students.

Literature Review

According to research distance learners have been shown to have the highest risk of dropping out of their programs of study at tertiary education institutions (Peters, 1992). A phenomenon that can be largely attributed to the isolation experienced by these students (Delahoussaye & Zemke, 2001; Hipp, 1997; Lake, 1999; Okun, Benin, & Brandt-Wiliam 1996; Peters, 1992; Rogers, 1990). Usually, students desire a sense of being a part of a larger university community, rather than simply being an enrollee or statistic in a course.

Therefore, the distance factor inherent in distance education has been identified as one of the major problems for students studying in this mode (Meacham & Evans, 1989; Suen & Parkes, 1996). This geographic isolation significantly detracts from the need for social interactions that are usually afforded by face-to-face situations. On top of the practical problems of contacting academic and administrative staff, obtaining study materials on time, and gaining immediate access to resources such as laboratory equipment and library books, distance learners endure the disadvantage of being unable to interact in person with other students, which can cause a significant damper on their motivation and enthusiasm for study. As such, they are very often denied a sense of belonging to a scholarly community (Galusha, 1997). The feeling of isolation derives from the distance learner’s psychological perception of detachment from the instructor, peers, institution and resource materials. Often times the feeling of isolation is determinant of the learner’s success or failure (Moore, 1989; Hillman, Willis & Gunawardena, 1994).

Thus, great emphasis should to be given to the need to mitigate isolation issues by increasing the opportunities of dialogue among all parties within the design and practice. Isolation decreases with the learner's perception of availability of instructor, peers, administrative staff and resources as well the degree of connectedness (engagement) among them (Shin, 2003).

Another related concern for the distance learner is the perceived lack of contact with and timely feedback from an instructor. To an even greater extent than other students, distance learners are likely to have insecurities about learning (Knapper, 1998) and need both a level of guidance as well as assurance that they are on the right track. Without this support, they may face difficulty in self-evaluating their progress and their understanding of the subject material. Time management too, can become a problem as they invest inordinate amounts of their study time in activities deemed unimportant or less important by the instructor, or in futile searches for answers to queries that could have been clarified or resolved in a matter of minutes by asking a simple verbal question in a conventional university. Such issues therefore, can lead to considerable frustration with the distance education experience, and result in feelings of inadequacy as well as a lack of self-confidence (Wood, 1995).

Over the last few decades, a large number of students have been entering universities with little idea of the institution's culture and few avenues enabling them to acculturate (West & Hore, 1989). According to (Lake 1999) these students include "recyclers" seeking to upgrade their vocational or industry qualifications; "deferrers," who failed to take up offers of university places upon graduation from high school; "returners," who discontinued their initial university studies, often as a result of perceived isolation; and "early school leavers," who typically have negative memories of their past educational experiences. In his seminal work on distance education, (Keegan, 1996) asserts that the separation of students and teacher removes a vital link of communication between two parties, which must be restored by means of explicit steps to "re-integrate" the teacher-learner interaction, albeit somewhat artificially, through measures such as ongoing electronic or telephone communication. In the absence of these measures, distance students are less likely to undergo acculturation into institutional life and more likely to drop out.

This problem is compounded by the fact that many of these new students may have little or no experience with tertiary study in general, or have had prolonged absence from study. Unless they quickly develop academic "survival skills", these students are at a considerable risk of withdrawing or failing (Wood, 1995). Of particular importance is the design of distance study materials and learning activities (Mecham & Evans, 1989; Race, 2005; Simonson, Smaldino, Albright, & Zvacek, 2005) which must carefully consider the special needs of these students. (Galusha, 1997) has done an excellent job of presenting a broad overall picture of the above mentioned and other issues by listing six major categories of problems from the distance student's perspective:

- balance between costs (monetary and time) and motivators
- availability of feedback and teacher contact;
- access to student support and services;
- feelings of isolation and alienation;
- lack of experience (in tertiary study and/or studying at a distance); and
- lack of (technical) training.

Accordingly, (Garrison, 1997) emphasizes the importance of social presence, which he proposes is the extent to which remote communicators can project themselves to others using any given technology or medium. Much research has been devoted to the creation and maintenance of social presence in technology-mediated distance learning environments (Rourke, Anderson, Archer, & Garrison, 1999). Without this dimension of connectivity between learners, in addition to teacher presence and rapport, distance learners will often flounder, become increasingly frustrated, and may

ultimately withdraw and fail. The tendency and preference for people to work together in groups is a central tenet of social presence theory, so the model is of greater interest to distance educators. According to (Short et al., 1976) when social presence levels are low, group members feel disconnected, social cohesion is lessened, and group dynamics are weaker. Conversely, when social presence is high, members tend to feel more connected and engaged, and are motivated to participate in group processes such as collaborative learning. Research also shows that both individuals and groups will be better placed to accept technology-mediated communication as a substitute for face-to-face communication if social presence is high. The successful distance mode student needs to have a number of characteristics such as tolerance for ambiguity, a need for autonomy, and an ability to be flexible (Threkeland and Brzoska, 1994). (Hardy and Boaz, 1997) found that “compared to most face-to-face learning environments, distance learning requires students to be more focused, better time managers, and to be able to work independently and with group members”.

As indicated before, distance education students need to feel a part of a community. If they are left alone to themselves, students in these communities often feel less pressure to perform individually, and more pressure to collaborate and be part of the team (Kantor, 1998 cited in Greenberg, 1998). Being involved in a collaborative learning process is an important part of forming the foundation of a learning community. When this is not encouraged, participation is generally low and dialog is absent (Palloff & Pratt, 2000). Students also need the attention of the committed instructors. This is very much warranted in a distance situation than in a traditional classroom. In situations where eye contact and proximity are limited, students cannot be disciplined nor affirmed by eye contact and body language (McKnight, 2000).

Therefore, according to the above mentioned studies the “distance” of the distance mode of teaching is one of the universal problems faced by students, studying in Open Universities. How do these problems affect students, studying social sciences at the Open University Sri Lanka?

Conceptual Framework

“Distance teaching theory “ articulated by (Holmberg, 1985) states that distance teaching will support student motivation and promote learning pleasure and effectiveness if learners are engaged in discussions and decisions, and the technological programmes provide for real and simulated communication to and from the students (Cavanaugh, 2001:75). As in any normal classroom, interaction is the core of teaching. Distance education is believed to work very well, and produce results as effective as traditional classroom instruction (Kearsley, 1996:55-58). However, the distance education currently in practice, specially in the first world, has the potential to provide more effective learning with updated pedagogy, more experience, and greater understanding and knowledge of methods. Moore and Thompson, (1990) is of the opinion that improved distance education practices using forms of new technologies have the potential to enhance educational outcomes, especially when the amount and type of learner interaction is increased and there is student to student interaction and teacher to student feedback. (Wagner, 1998:417) believes that distance learning practitioners tend to view interaction as the “single most significant attribute that defines a contemporary distance learning experience”. (Gilbert and Moore, 1998:29-35) note that an accepted definition of ‘interactivity’ in the literature on computer-mediated instruction is a reciprocal exchange between the technology and the learner, a process which they say is referred to as “feedback.” (Sherry, 1996) holds that ‘interactivity’ takes many forms; it is not just limited to audio and video, nor solely to teacher-student interactions. It represents the connectivity the students feel with the distance education lecturer, the facilitators and their peers. (Sherry, 1996) further, states that without connectivity, distance learning degenerates into the old correspondence course model of independent study. The student becomes autonomous and isolated, and eventually drops out. She argues that effective distance education should not be independent and isolated from learning, but should approach Keegan's ideal of an authentic learning experience, namely that the

distance learning system must artificially recreate the teaching-learning interaction and re-integrate it back into the instructional process.

Keeping the above points as background, this paper looks into the problems faced by the department of social studies in the open university of Sri Lanka with regard to the students and distance teaching.

Significance of the Study

The Social Studies Department of the Open University of Sri Lanka has administered the B.A. Degree in Social science for the past two decades. The mode of teaching was Print tutor, accompanied by a number of day schools. The Teaching method was traditional, mainly text books, revised sessions, delivery was based on the transmission model. The drop outs were also quite common, and there were also a large number of students who gained incomplete status due to various reasons. The following table (figure 1) shows the available figures of drop outs in a graph form in the year 2014.

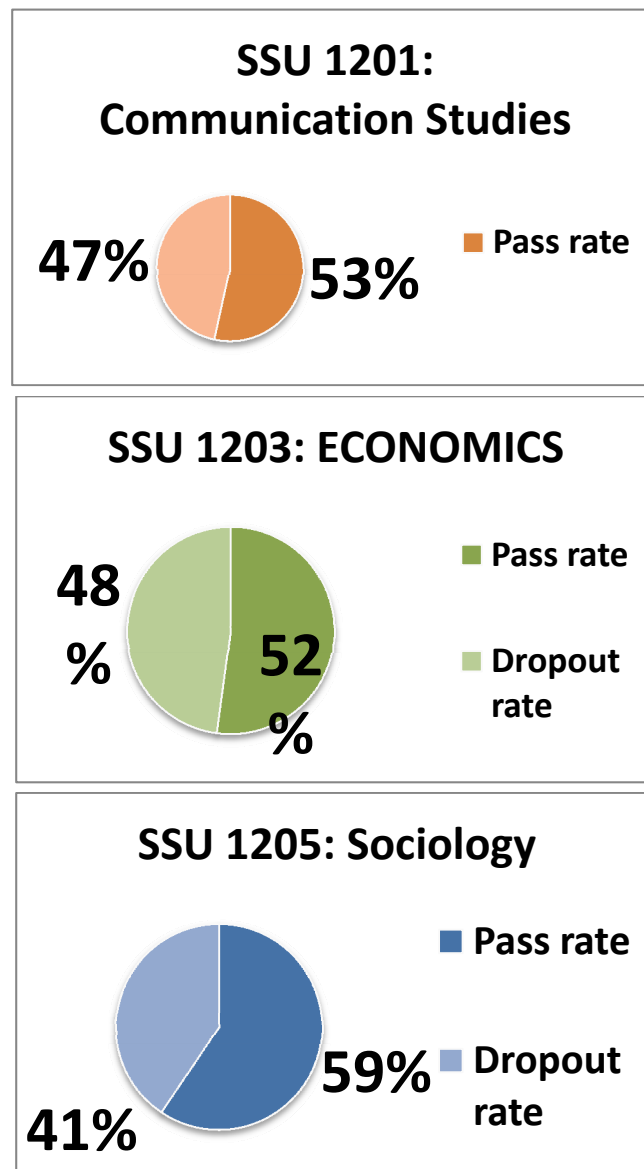


Figure 1

This was an enigmatic issue for most of the academics, and serious attention has to be paid why this was happening? Various ad hoc solutions were applied but without much effect. As concerned academics using open and distance learning, various solutions were applied including tutor clinics, tailor made orientation sessions, success narratives related by past successful students and availability of past question papers, model answers and new types of assessment methods.

In addition, with a generous grant of the World Bank known as the Quality Innovative Grant, (QIG), two years ago, which was won on with competing with other conventional universities in Sri Lanka, the department of social science was able to up-grade the existing B.A. Degree program and introduce a series of new subjects in keeping with the demands of the industry and the students and appraisal of the exiting degree. The department was able to introduce new forms of technology to improve and enhance the quality and to motivate students. Introducing of three types of courses, namely traditional, IMM (interactive multi-media) and Online, use of multi media, S.M.S. alerts, many online courses, and a digital dictionary were some of the new technological supported learning that were introduced under this World Bank Grant. More specifically, innovations included, I.M.M, limited texts supported with selected audio-visual material and marking of the assignments in the regions itself, instead of sending to the main center in the capital. All of these courses were delivered through Moodle. Video conferencing was also tried as an innovation or a novelty. However, the students response especially in the regions as well as the main center was not so encouraging. Instead of taking the courses, and assignments seriously, most of the students used the easiest way out namely ‘cut and paste’ from the Wikipedia and some also opted to drop out from the degree. Incomplete status numbers also started to grow. Most of the students were also not reading the given lesson materials at home before attending the limited day schools. Though some subjects were offered as a blended course, there were not much enthusiasm or interaction. Only few students make use of the Moodle to pose questions or comments.

Research Questions

- Why are the registered students dropping out or discontinuing their studies after enrolling ?
- What can the academics/visiting academics do to stop the dropout and discontinuation of the degree by the students?
- Will the new technology help retention of the students and motivate existing students or demotivate ?
- What remedies can be suggested to improve the situation?

The Research Design and Method

- (a) For the purpose of this case study, a qualitative method, namely focus group, using a purposive sample was employed. Results of the design are outlined as indicated below:
- (b) A literature review with particular reference to the problems of distance learning, and advantages and disadvantages of new forms of technologies were made.
- (c) **Data collection:**
Qualitative research method, namely a focus group discussion with visiting academics, including some regional directors were made.
- (d) **The instrument:**
The study was done by means of focus group interviews with the visiting academics of the regional centers and regional directors.

In order to find out why this was happening, as explained before a purposive sample namely a focus group discussion was conducted among the visiting academics of the regional centers including Colombo. They were divided according to the disciplines they were teaching, namely Sociology, Mass Communication, Economics and Political Science, and ended up with a general discussion among representatives from each group sharing their ideas in a common assembly. The discussions were conducted and monitored by the senior academics who were teaching in the main regional center, namely in Colombo. Thus, four groups were formed and in each group there were 10 to 12 members men and women. It should also be mentioned that some of the visiting academics happened to be former students of ours, namely the open university who had obtained a degree in Social Science in previous years. Therefore, they were able to represent aptly the perception or the views of the students, since they, themselves had gone through studies using distance mode. Following are some of their perceptions about student drop out and discontinuation of the studies after one or two semesters.

Result and Discussion

Almost all focus group members agreed that most of the enrolled students experienced “loneliness” and most of the symptoms were mentioned by previous researchers in the literature review. As expressed previously in the introduction of this paper, distance learning implies a physical separation between students and instructor. One of the views expressed in the focus group was that this ‘physical separation’ creates a real challenge for some of the students who might need or desire academic or technical support, and it quickly becomes a source of frustration. Another point mentioned was that due to the large numbers enrolled ‘feedback’ given by the academics was getting delayed and it affected adversely in their studies. Since there is no face to face contact with teachers, students have trouble in self-evaluation.. The situation has become worse due to the suppression of cadre positions at all levels during the past few years. Due to the medium of instruction “English” recruitment of qualified academics was difficult especially in the remote regional centers specially in the North and East. The so called “feedback” factor also affects commitment by the students. A traditional classroom, environment usually carries with it a certain level of social pressure. Namely the teacher and other classmates, expect each student to come to class every week, complete the assignment, answer the teacher’s questions and actively participate in group projects. Ideally these behaviours should be there in the distance –learning class as well, but the social pressure to comply is absent since attendance is not compulsory. Use of traditional transmission model of communication, by the academics that were trained in conventional universities was another negative factor that demotivated some student’s especially adult students. Since face to face sessions were reduced due to the introduction of new forms of technology, and for reasons of cost cutting most students were left to study on their own without any guidance. Family problems, including family commitments and constraints in the work place was another reason for dropping out.

Some said they were able to survive as students due to the support given by either husband /wife and, encouragement of their peer groups, who made a point to meet regularly in the university premises. However, in the past few years, this type of meetings were not encouraged or totally stopped in all centers due to short sited administrative blunders made by a previous administrative officer due to his lack of experience in distant mode education. This was also mentioned as a reason for drop out. Further some of the visiting academics who were interviewed mentioned that dissolving of the student councils, lack of recreational facilities were also a factor affecting drop out and dis-continuation of studies. Another view expressed by most of the visiting academics was that lack of computer literacy and fear of technology specially among the older students was another reason of dropout. Using a computer even to type a assignment was difficult for some of the adult learners. Some students did not know even to use a type writer properly. Most did not have even an e-mail address. Ushering of new forms of technology did not over come the embedded “distance” factor in the distant mode. According to the answers, given by focus group members, one of the main disadvantages, of distance learning is the absence of Social Interaction among students

who are enrolled in distance learning programs. Unlike in the conventional universities, students often miss the aura of social interaction with teacher and their peers. Another drawback mentioned is that distance learning is an inappropriate format for everyone though many like to enroll. Due to lack of places in the conventional universities in Sri Lanka, of late, there is a tendency in younger people to enroll on the degree program offered by the department, pre-supposing, that just as in the conventional university, teaching method of the open university in Sri Lanka is also based on the traditional transmitting model. However, this proves that not everyone is suitable or prepared for enrollment in correspondence programs especially if a person tends to lag behind their work, lacks motivation and requires individual coaching from his/her teacher. Another important point mentioned in the discussion is that in Sri Lanka, there is a very strong tuition culture, where ordinary level students, and advanced level students pass competitive government exams due to strong doses of tuition almost in all subjects. In most of the tuition classes, probable answers to the popular public exams are dictated word to word by the tutors. Due to lack of places in the conventional universities or fear of ragging, there is also a tendency among the young people to select the open university, as a pathway to their higher education without understanding the method of teaching. However, as mentioned, some students learn only when they are physically present in the class and assimilating all the information personally and with the help of peers. There is also a misunderstanding among some of the students is that Online degrees are inferior to the degrees offered by the conventional universities. This type of wrong perceptions or negative attitudes could reduce the motivation of teachers and as well as academics. In order to correct this wrong perceptions the department, needs to ensure the quality in content and delivery of distance learning courses that matches with the regular conventional campus classroom learning. However, this has not happened adequately due to lack of staff members and suppression of cadre positions during the past few years. As a temporary measure, of acute staff shortage at all levels, the department had recruited some temporary graduate assistants but due to the temporary nature of their jobs many have not lasted working and left the job when they found a permanent job elsewhere. It is a fact that every time when one leaves, the department new recruits have to be trained again and this has happened constantly and had become a burden to the department.

With some of the above serious concerns on how to address the physical separation between student and instructor, which is the base of distance learning, in addition to the new innovations already mentioned though in a limited way, “video conferencing” was tried out. Many stated that specially in the regional centers, due to lack of equipment there was not much interaction, except raising of hands by the students. It is a fact that an effective distance learning class needs to incorporate interactive tools, when introducing educational tools such as discussion boards, wikis and blogs, and synchronous audio or video components. However, even with limited interactive tools used in blended online courses, only few students took the trouble to make use of them. Another important point that came from the focus group discussion was that, no body likes to take few courses at their own pace which is one of the key characteristics of distant mode of teaching. The commonly expressed view of the focus group was that, almost all wanted to finish the course as soon as possible and get the degree. One reason for this was that since most of the students who joined the social science degree were relatively young, they all wanted to finish the studies as soon as possible because delaying the degree means, if they are not married, postponing of marriage, and losing the chance of getting a suitable employment, since jobs were scarce commodity in Sri Lanka.

A Way Forward

As solutions to the problems of student drop outs and increasing incomplete of required courses the following points were suggested by some of the focus group members. Introducing a retention system, such as keeping a reasonable deposit charged from the students, and reimbursing with the interest when they complete their graduation, or a kind of point system or reward system based on the completing of required credit courses, slowly moving away with transmission model of teaching, more and more participatory, and interactive teaching sessions, and increasing of personal contacts with tutors and peer groups. Many agreed that new forms of technology is useful and

promising but problems with equipment and lack of adequate equipment and infrastructure need to be attended to before trying out new innovations, and visiting lecturers and regional directors and technicians need to be properly prepared and instructed on the use of new technology. Since timely “feed back” is a necessary component in the distance mode of teaching, it was suggested to minimize the delays by using colour codes for different subjects so that they are sorted out quickly and given to the tutors for marking and make arrangements to give eligibility marks as soon as possible.

Conclusion

How do we bridge the gap of distance faced by the students? Are the new forms of technology bridging this gap or widening this? The opinions and valuable insights expressed in the focused group shows reasons for dropout and discontinuity of the degree may be due to problems of social presence, lack of feedback and interactivity, faced by the students, as well as other problems mentioned in details. It is no doubt new technology mentioned above as Web O2 technologies have worked well in many countries because of the available adequate resources, and other necessary infrastructures that suits the modern technology. However, the Open University of Sri Lanka has a long journey ahead before welcoming such innovations. This paper has further highlighted that stakeholders responsible for bridging the gap of distance embedded in the distance education for students are not only the department in which they are enrolled but the whole university, namely starting from a chief executive to a security guard. Unless there is synergy of all stakeholders working towards one goal, namely making the distant student and their immediate environment pleasant new forms of technologies are not going to be effective. As said by (Greenberg, 1998) advancement in technology does not lead to effective distance education. The best distance education practices depend on creative, well-informed lectures, tutors, instructors and student friendly academics and non academic staff. As (Palloff and Pratt, 2000) aptly reminds “technology does not teach students; effective teachers do”. Based on the above findings the department of social studies of the Open University of Sri Lanka, has to go slow in introducing new technologies, because they might widen the distance between students and the department instead of bringing it closer. As expressed and articulated in this paper there are other urgent needs that need immediate attention before we embrace new forms of technology.

Finally this research paper has highlighted the urgent need for further research on various aspects that have surfaced within focus group discussion. These are in fact an eye opener and challenge for all who want to fall in line with the vision and mission of the Open University of Sri Lanka, namely

"To be the premier Open and Distance Learning institution in Asia through excellence, efficiency and equity in Lifelong Learning and "To enhance access to high quality, affordable and relevant education through Open Distance Education and ensure life-long learning opportunities to face challenges in a knowledge society.

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STUDENTS' RESPONSES TO MATHEMATICS LEARNING AND STATISTICS THROUGH ONLINE TUTORIAL SYSTEM IN UNIVERSITAS TERBUKA

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Abstract

Universitas Terbuka (UT) as one of many universities to apply open and distance learning (ODL) system requires an interactive, effective and has a certain quality learning providing service (tutorial) to cover all of UT's students in every region wherever they might be. Service that has been known to fulfill conditions above is known as online tutorial (tuton). However, tuton has its positive and negative effects. This research aims to describe UT students' response in learning mathematics and statistics through online tutorial system. This research uses quantitative approach with survey model. Inspected subjects were 48 bachelor program students in Mathematics Education who were taking Statistics subject and 42 master program students in Mathematics Education who were taking Mathematics Learning subject 2015.1 registration periods. Collected data were analyzed using descriptive statistics. Result of this study showed that 100% of students were agreed or strongly agreed that with tuton they could access learning materials at any time repeatedly, communicate with other students at any time. Furthermore, 70% of students were agreed or strongly agreed that they could communicate with online tutors at any time and could be more independent at learning. Yet, only 45% of students agreed that they could understand learning materials better with tuton.

Introduction

Universitas Terbuka (UT) as one of many universities to apply open and distance learning (ODL) system constantly try to balance the aspect of accessibility and quality as in the meaning of intensification-interaction (Belawati, 2003). UT, as university with ODL system, also became member of similar institutions at regional and global levels. The integrated institutions are Asian Association of Open Universities (AAOU), Global Mega-University Network (GMUNET), and International Council for Open and Distance Education (ICDE). In ODL system, there are three components which affect learning quality. The three affecting components are learning material, service to student, and examination. Quality of learning material and examination are relatively easier to control because the institution handle it directly, whereas quality of service to student component is harder to control because it is not fully handled by the institution. In service to student component, especially learning providing service (face to face tutorial), it is handled by tutors in each region.

UT's effort to improve its sustainable service quality became the main agenda and tangible act as declared in UT Strategic Plans 2005-2020 (UT Senate, 2004). Those effort works in accordance with UT's vision: In 2021, UT will become a world class ODL institution in producing high quality learning organization, development and ODL information outspread or which known as high quality learning product. This was proved by achievements received by UT including International Quality and Accreditation Certificate from International Council for Open and Distance Education (ICDE) Standard Agency (ISA) respectively in August 2005 and in November 2010, UT has, reinstate Quality Certificate from ICDE, which indicates that UT has been holding world quality ODL system, it also indicates that UT has met international learning providing standard for its service to UT's students across Indonesia.

In March 2006, UT also achieved ISO 9001:2000 certificate for Learning Material Service from SAI GlobalCertificate Association and in 2014 UT achieved ISO 9001:2000 certificate for Learning Material Service, Learning Material and Exam Development, Academic Administration Service and ODL service from PT. SGS Indonesia certification agency. Following efforts need to be done is to improve the quality in learn providing service (tutorial) to get more certificate and achievement.

UT students' learn providing service use online learning system including online course, online counseling, online tutorial and online examination, also apply learning through modules known as BukuMateriPokok (BMP) or Modul (Katalog, 2008). Applied two way interaction between students with institution and tutors in UT which usually separate teaching act and learning act could make psychological and communication gap (transactional distance) in learning process was hoped to be minimalized (Moore, 1993; Peters, 1993).

Unfortunately, the fact showed thattuton still could not work inan effective and efficient way because of the low participation whether by students or tutors. Based on research done by Meilani (2015), only 32% of students who use tutorial passively where students only read the materials, initiations, questions, comments by tutors or other participants without doing any further activity. Furthermore, only 5,8% of students were active proposing questions, comments, responding questions or answers from tutors or other participants. Adji and Hamda (2012) also stating that there were only 23% of students who were active in tuton.

Lowstudents participation tuton need to be overcome. First step to overcome it is to understand how students response towardstuton. Response are differentiated into two, the first is their response towards the benefit of tuton (did students achieve and feel those benefits?) and the second is their response towards the weakness of tuton (did students feel those weakness?). Based on the explanation above, researchers want to investigate students' responses to Mathematics Learning and Stastics subject learning through online tutorial learning system in Universitas Terbuka.

Objective of the Study

Inspected subjects were 48 bachelor program students in Mathematics Education who were taking Statistics subject and 42 magister program students in Mathematics Education who were taking Mathematics Learning subject in 2015.1 registration period.

Research Question

How did UT's students respondin learning Mathematics Learning and Statistics subject through online tutorial system?

Significance of the Study

This research describe UT's students responses in learning Mathematics Learning and Statistics subject through online tutorial system.

Literature Review

Tuton is a tutorial service based on internet or web which followed by UT's students. Tutonwas held by UT to overcome learning barriers that happened in face to face tutorial which are (a) only could be followed by students around the tutorial area and (b) limitation at time that made students could not follow the tutorial. Furthermore, tuton was hoped to create challenging activity for students to connect new information with the old one, students could achieve purposed knowledge and use their metacognitive capability (Anderson and Elloumi, 2004).

Tuton has many benefits which are including:

1. Capability to access learning materials at any time repeatedly.
2. Capability to communicate with other students at any time.
3. Capability to communicate with their tutors at any time.
4. Better learning independence.
5. Better learning materials understanding.

But, tuton also has its lacking aspects which are:

1. Chance of slow internet connection while doing online tutorial.
2. Extra cost for internet.
3. Less social interaction.
4. Tuton tend to train not educate.
5. Low motivation to learn could cause learning failure (Waryanto, 2006).

Tuton could be effective and efficient if:

- (a) Tuton could present learning materials and using a right strategy which could make students capable to learn the materials efficiently.
- (b) Tuton could explain to students the reason why they need to learn the material so they could be motivated.
- (c) Tuton uses certain strategy to foster students' metacognitive capability in learning process.
- (d) Tuton could foster students to be more active at learning.
- (e) Tuton could foster students to construct their knowledge, not only by receiving the knowledge.
- (f) Tuton works interactively so it could triggers motivation and social interaction that could help students to develop their personal meaning (Anerson and Elloumi, 2004).

In UT's tuton, students' final score defined by three components, which are passive participation, active participation and task. Score qualities in each component respectively are 20%, 30% and 50%. Passive participation consist of students' involvement on reading, whether it is initiation materials, questions, comments, or responses from tutorial participants. Active participation consist of students' involvement to propose questions, comments or responses towards questions or issues proposed by the tutor in online tutorial act or responding to other participants' responses or answers. Tutors also evaluate tasks that have been done by students. Online tutorials conducted in 8 initiations in 8 weeks starting from closing registration period until just before final test period (Meilani, 2015).

Methods

This study uses quantitative approach with survey model. Inspected subjects were 48 bachelor program students in Mathematics Education who were taking Statistics subject and 42 magister program students in Mathematics Education who were taking Mathematics Learning subject in 2015.1 registration period.

Steps of this study were as follows:

1. Researchers develop questionnaires about students' response to mathematics learning through tuton. Developed questionnaire was based on theories about benefits and weakness in online tutorial.
2. Researchers distribute the questionnaire to 90 students who were being subject of this study through email.
3. Researchers collect the data using frequencies table and represent the data into graph model.
4. Researchers analyze and correlate the questionnaire to active participation, passive participation and tuton scores descriptively.
5. Researchers seek for responses differences in each subject. Conclusion taken using Mann-Whitney non parametric test if one of the response do not spread normally. Normality test done using Kolmogorov-Smirnov test. Both test done by researchers using Minitab Statistics 16.2.1
6. Research conclude the students' responses data to Mathematics Learning and Statistics through online tutorial and its impact to learning result.

Results and Discussion

Researchers survey the inspected subject using questionnaire towards mathematics study through tuton. The questionnaire was distributed to 90 UT students in 2015.1 registration periods who were taking subjects that taught by the researchers. There were 42 students who were taking Mathematics Learning and 48 students who were taking Statistics subject. All questionnaires were distributed through email and there were 82 students who reply via email to researchers. Result could be seen in Table 1.

Table 1: Students' Response Toward Tuton

NO	RESPONSE	SA	A	D	SD
1	Students could access learning materials at any time repeatedly through tuton.	48%	52%	0	0
2	Students could communicate each other at any time through tuton.	47%	53%	0	0
3	Students could communicate with their tutors at any time through tuton.	37%	33%	30%	0
4	Students are more independence in learning through tuton.	16%	54%	17 %	14%
5	Students could understand learning materials better through tuton.	0	45%	38%	17%
6	Slow internet communication while doing tuton.	10%	55%	35%	0
7	Expensive internet cost.	0	40%	43%	17%
8	Lack of social interaction through tuton.	37%	48%	13%	2%

Result showed that 100% of students were strongly agreed or agreed that (a) students could access learning materials at any time, repeatedly, with tuton, (b) students could communicate each other at any time with tuton, (c) 70% of students are strongly agreed or agreed that they could communicate with their tutors at any time with tuton, (d) 70 % of students are strongly agreed or agreed that students are more independent at learning with tuton. It means that 4 out of 5 tuton benefits are proved in mathematics learning held by UT.

However there was one benefit of tuton where only 45% of students agree, and the other 55% were disagreed or strongly disagreed, that is where students could understand learning materials better with tuton. This could be shown by tuton scores that achieved by students that only 46,6% of them are having more than or equal to 66 (Table 2).

Table 2: Tuton Scores in Mathematics Learning and Statistics Subject

NO	MATAKULIAH	TOTAL STUDENTS			AVERAGES
		> 75	66 - 75	<66	
1	Mathematics Learning	90,5%	2,4%	7,1%	82,5
2	Statistics	4,2%	2,1%	93,8%	41
Total		44,4%	2,2%	55,4%	60,4

Furthermore, result showed that students who took mathematics study are tend to agree that tuton could help them to understand learning materials better. On the other hand, students who took Statistics tend to disagree or strongly disagree that tuton could help them understand learning materials better. Different respond affect to learning result which in Mathematics Learning, 92,9% of students got more than or equal to 66, and in Statistics subject there are only 6,3% of students who could reach 66 or more.

This could be happened because of the difference in characteristics of those two subjects. In Mathematics Learning, materials are more into theories and methods to teach mathematics in a classroom or on the other hand, mathematics study materials are closer to social knowledge. Whereas in Statistics, materials were more into mathematical content. Students claimed that they “didn’t know what to ask”, “didn’t know what to answer” or “find it hard to write symbols on forum discussions”. That case could make low students participation in forum discussions in this subject. Average access value in discussions/initiations in Statistics subject is 37.7/100. Different results are showed in Mathematics Learning subjects which scores is 85.2/100.

The different results then analyzed furthermore using two samples comparison to find out if it was significantly different through statistics. At first, researchers examine the Mathematics Learning and Statistics score data normality using Kolmogorov-Smirnov test. Kolmogorov-Smirnov test was done with Minitab 16.2.1. Result shows that the Mathematics Learning and Statistics score didn’t spread normally with $p\text{-value} < 0,01 < 0,05 = \alpha$ (Figure 1).

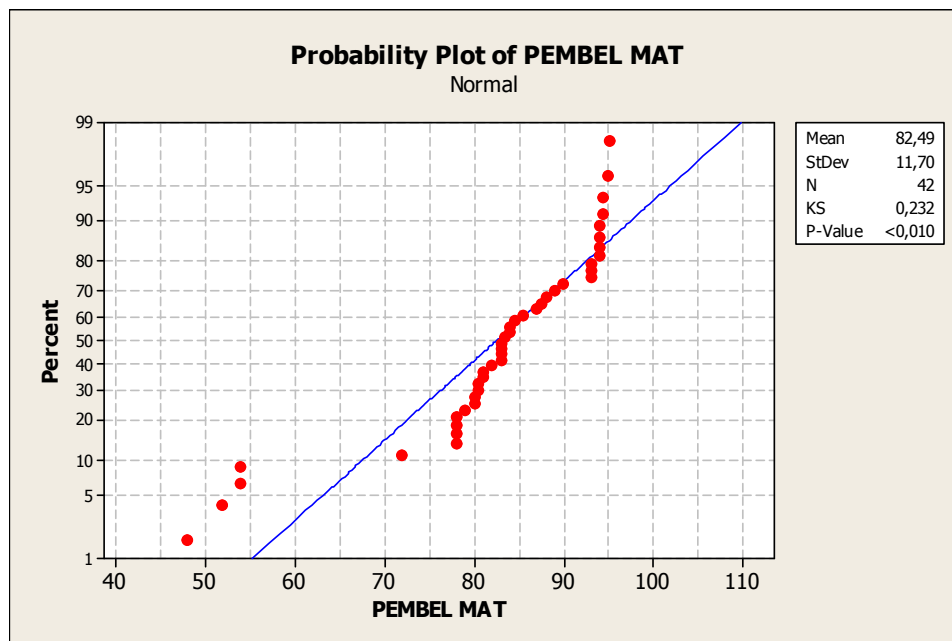


Figure 1: Mathematics learning's score data normality test

It means that researchers couldn't use parametric test that requires data normality and turn to nonparametric test in Mann-Whitney test. This test also done using Minitab 16.2.1 and the result shown below:

Mann-Whitney Test and CI: PEMBEL MAT; STATMAT

	N	Median
MATLEARNING	42	83,250
MATSTAT	48	35,000

Point estimate for ETA1-ETA2 is 48,000

95,0 Percent CI for ETA1-ETA2 is (39,000;49,998)

W = 2868,5

Test of ETA1 = ETA2 vs ETA1 not = ETA2 is **significant at 0,0000**

The test is significant at 0,0000 (adjusted for ties)

Result shown above shows that $p\text{-value} = 0 < 0,05 = \alpha$. It means that there are differences in learning score between Mathematics Learning and Statistics subject. Despite of differences in its content, differences in learning score was also caused by differences in students' responses to their subject itself, where students who learn in Mathematics Learning giving more positive responses than who learn Statistics.

Results above are in appropriate with research held by Meilani (2015) that showed that 50% of students state that tuton is useful to understand Modul materials. Moreover, there were 64% of students who state that tuton help their final exam preparation, 39% state that tuton could improve their knowledge and 13% state that tuton could help them finishing their task independently.

Result also showed that 65% of students who state that one of obstacles in tuton is slow internet connection. This case could be caused by two reasons, the first one is because students didn't have private internet connection so they have to use public internet connection which are tend to have slow connection, and the other reason is that there are problems in UT server, which are stated by 29% of students who were inspected by Meilani (2015). Slow internet connection could cause low

participation in online tutorial (Winataputra and Juliah, 2006). Slow internet connection could also caused by the lack of students' technology ability (Sandra and Hamda, 2012). This was also supported by research done by Adji, et al. (2010) that showed some UT students still need help from their family or relative to just to open UT website. This research also showed that 40% of students who stated that expensive internet cost is one of obstacle for tuton where 60% of students are disagreed with that statement. Same reason also stated by Meilani (2015) in her research that showed that there are 58% of students who spent Rp 25.000; 20% of students spent Rp 26.000 – Rp 50.000; and 22% of students spent more than Rp 75.000 for internet per month.

Results shown in questionnaires also showed that 67% of students state that tuton causing lack of social interaction between students or tutors. The lacks of social interactions could actually be solved if tutor could construct good and effective initiations (online course). Murray, et al. (2012) said that a certain initiation could facilitate and foster interactions between students, tutors and still could deliver the content. Furthermore, Andersone (2015) said that students could understand materials better if interactions between students with materials were fostered to the higher level. That could be done if students could access open resources. Moreover, Murray (2012) said that there is a significant positive correlation between students' average access to open resource and final score achieved by students. The correlation coefficient is $r = 0.384$ with $p - \text{value} < 0.05$.

Conclusions

This study is aimed to describe UT students' in 2015.1 registration period responses toward Mathematics Learning and Statistics through tuton. Result of this study proved some tuton's benefits through questionnaires which showed that 100% of students are strongly agreed or agreed that (a) students could access learning materials at any time, repeatedly, with tuton, (b) students could communicate each other at any time with tuton, (c) 70% of students said strongly agreed or agreed while the other 30% are disagreed that students could communicated with their tutors through tuton, and (d) 70% of students who strongly agreed or agreed, while the other 30% are disagreed that students are more independent at learning through tuton.

However, there was 1 benefit that only 45% of students agreed, that is if they could understand materials better through tuton. This could be seen with by investigating students score, that there were only 46.6% of students who achieve score more than or equal to 66 with overall average is 60.4.

Some obstacles in tuton based on the result of students' response are 65% of students said that slow internet connection happened while doing tuton, 40% of students said that using internet is expensive, and 85% of students said that tuton could cause lack of social interaction between students or tutors.

Those obstacle need to besolved to achieve UT vision: In 2021, UT will become a world class ODL institution in producing high quality learning organization, development and ODL information outspread or which known as high quality learning product. Solution offered is for tutors to conduct good and effective initiations and tasks so students could be fostered to interact between each other, interact with their tutors and to access open learning resources.

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THE GROWTH OF IRADIO OUM AS A QUALITY AUDIO LEARNING MATERIAL PROVIDER

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Abstract

The fluid education landscape today calls for equally dynamic and inventive technology to develop and deliver learning materials. As a leader in open and distance learning in Malaysia, Open University Malaysia (OUM) constantly explores new frontiers and innovations in education as well as improve on existing tools to produce quality learning materials. Since its establishment in 2007, iRadio OUM has grown as one of OUM's consistent contributor for quality audio learning materials. iRadio OUM blends existing live-streaming and podcasting technology with quality instructional design strategies and delivers audio learning segments, learning capsules and audio books. Upholding flexibility and learner-centredness as the main driving force, the live-stream is edited into podcasts or iCasts that can be subscribed to and accessed by anyone, anytime, anywhere in the world. The different formats of audio learning materials can also help address different learning styles and adds value to the overall quality of the learning experience at OUM. This paper looks at the progress of iRadio OUM over the years, the evolution of technology used and its overall significance to OUM's continual growth and development.

Key words: Internet radio, mobile learning, iradio, learning podcast, audio learning materials

Introduction

Launched in April 2007, iRadio OUM was established with the idea of addressing different learning styles. Focusing on audio learning materials, segments, capsules and audio books based on the modules the Centre for Instructional Design and Technology develops are produced and broadcasted daily, from 9am to 5pm. These audio files are later edited into podcast format and uploaded for audience to listen and download any time, at any place.

In its initial stages, iRadio OUM broadcasted mainly infotainment segments, highlighting current issues and events as well as useful tips for students. Broadcasts also include interviews with university management and faculty, introducing the university to the audience as well as explaining the functions of the various units. Topics such as the use of the Digital Library, registration and payment of fees are the main focus of broadcast then. iRadio OUM was operated by staff of the Centre for Instructional Design and Technology (CiDT), most of them multi-tasking the radio segment production with other job scope.

With the recruitment of dedicated iRadio OUM team in 2008, iRadio OUM began to venture into actually producing learning segments. Incorporating tested instructional strategies, the segments add value to the overall learning experience at OUM. Content from modules are chunked accordingly, given real life examples, made interactive with skits and discussion interviews with subject matter experts.

The Development of iRadio OUM

The demand for open and distance learning is something that is growing steadily. The launch of the Malaysia Education Blueprint 2015-2025 highlights lifelong learning as one of the pillars in education, recognising the significance of lifelong learning as a pivotal component in nation building. One of the challenges faced by many open and distance education is learning materials development and delivery. iRadio OUM meets this core need.

The venture into the world of online broadcast media is another effort by OUM in the blended learning mode. According to a study by the eLearning Guild, the use of a multi-channel approach or the blended learning method is preferred because it is more effective than providing class alone (76%), there is higher learner value and impact (73.6%) and learners actually like this method (68.6%) (Sparks, 2007).

The idea behind a blended learning approach is the amalgamation of different channels and media to deliver learning materials. Technology is arguably one of the most important resources in education. No industry or organisation, especially a distance and education provider can maintain their competitive edge without making full use of technology in all of its operations.

This is the area where iRadio OUM play its role for OUM. The learning materials developed and delivered are based on the modules offered by OUM. These audio learning materials also serve as a platform for subject matter experts, from module writers, moderators, lecturers to the deans of the faculty, to connect with the learners. Instead of just being in the foreground, these experts actually have the chance to share their knowledge with learners, bridging the gap between the faculty and the learners.

A central technology in use for at iRadio OUM comes in the form of podcasts. A podcast is audio content available on the World Wide Web. Audience can subscribe to the regularly updated podcasts and listen to the podcasts when it suits them. Although the term ‘podcasting’ can trace its origins to iPod, the popular digital music player from Apple (Jennings, 2004), podcasting is not limited to only this device. In fact, any smartphones, MP3 or MP4 players available in the market today can play the podcasts downloaded by the users. How podcasts are distributed is its key characteristic. Audience can choose to subscribe to the podcasts, either by using built-in media player, such as Apple’s iTunes or using RSS (really simple syndication) feeds where subscribers are sent the new files when it is updated.

Audio learning material can be a useful tool in teaching and learning because unlike your eyes, you can’t exactly shut your ‘earlids’ (McDonald, Teder-Sälejärvi, & Millyard, 2000; Wickens, 1984). Audio or sound as part of the teaching and learning strategy can effectively be used to gain and focus attention (Schmitt, Postma, & de Haan, 2000). Thus, with the correct instructional strategy, the use of audio files in learning can be used not only to gain attention, but also to help focus attention on appropriate information and engage a learner’s interest over time (Bishop & Sonnenschein 2012).

The use of podcasts in learning was further explored in a research done in Duke University. In 2004, the university provided first-year students with iPods “to encourage creative uses of technology in education”. The final result includes the use of iPod in students’ learning activities, with many citing using it, among other, as a “course content dissemination tool: portable access to content... distributed in various ways, including podcasting” and as a “...study support tool: repeated listening and repetition of audio content.” (Belanger, 2005)

Belanger's (2005) report also highlighted several benefits of using these podcasts. One of the benefits highlighted is the enhanced mobility of learning materials. With the podcasts, students have the choice on when and where to listen to their learning materials, giving them the freedom to revise and study anytime, anywhere. Another benefit highlighted in the report is that students are no longer restricted in terms of physical learning materials like their textbooks, lab and library opening and closing hours as well as the location of these facilities.

The potential of utilizing podcasts in the educational setting, especially in open and distance education is limitless. Offering flexibility in relation to study time and place, free and constant access to learning materials and freedom in terms of learning style, the use podcasts is extremely beneficial.

Types of Segments

As more e-learning materials are made available in OUM, iRadio OUM explored the possibility of functioning more as a campus radio rather than a full education-based radio station. Segments developed are now inclusive of edutainment segments and most of these segments aim to enrich the audience's knowledge and day to day life. Segment such as Eco Hour aims to foster awareness on environmental issues. This segment features interviews with OUM's Chancellor, Tun Jeanne Abdullah, who is very passionate about the environment and is the chairperson of Landskap Malaysia as well interview with Hajah Zainab Mohd Ghazali, Director of the Physical Planning Department, DBKL on their River of Life initiative.

The broadcast schedule for iRadio OUM is based on university semesters. New broadcast schedule usually commence late January, May and September. Each broadcast schedule will run throughout the semester with 10 segments produced for new each programmes. Below is a sample of the broadcast schedule:

	ISNIN	SELASA	RABU	KHAMIS	JUMAAT
9.00 - 9.30	OUM Promos, PSAs and Music				
9.30 - 10.00					
10.00 - 10.30	Fiqh Munakahat	Talk to DNA	Inspired Parenting	Psikologi Pendidikan	Sejarah Pendidikan Islam - Ustaz
10.30 - 11.00					
11.00 - 11.30	Klik-Klik Minda	OUM Cares	Ergonomics	Meh Jalan-Jalan	Masyarakat & Tamadun
11.30 - 12.00		OUM Book Club	Workplace Safety		Malaysia Kita
12.00 - 12.30	Family & Community in Early Childhood Edu	Internet Marketing	Word of The Day	LearningMania	Prinsip Aqidah
12.30 - 1.00	Introduction to Psychology		Hortikultur		Prinsip Pengurusan Islam
1.00 - 1.30	Children Evaluation and Observation	Financial with AKPK	Inspirasi Wanita	Business Sense	Eco Hour
1.30 - 2.00					
2.00 - 2.30	Abnormal Psychology	Introduction to Communication	Gaya Hidup Sihat	Big Hearts	Let's Learn English (with Zack)
2.30 - 3.00	Sudut Kreatif	Care for Your Child	Effective Leadership		
3.00 - 3.30	Editing for Publication	eLibrary	Reading Time	Home Sweet Home	Music 101
3.30 - 4.00	Newswriting and Reporting				
4.00 - 4.30	OUM Promos, PSAs and Music				
4.30 - 5.00					

Figure 1: January 2015 Broadcast Schedule

Every broadcast schedule consists of several important elements. One is the “learning segments”. These 30 minutes to 1-hour long segments provide value-added learning materials for the learners by inviting subject matter experts, module writers as well as moderators. These guests are invited to highlight aspects within the modules that otherwise might not have been covered in their tutorials.

iRadio OUM also broadcasts segments that informs listeners of the latest going-ons in OUM, such as convocation ceremony as well as interviews with OUM’s top management, such as the Chancellor and the President and Vice Chancellor. These are the “campus radio” segments. This category also includes interview sessions with notable visitors from all over the world, usually academicians touring OUM and sharing their views and knowledge with OUM citizens, staff and students alike.

Apart from that, iRadio OUM also produces edutainment segments as part of the broadcast schedule. These are segments loosely based on modules, focusing on one or two topics that the general public can relate to. For example, the segment “Inspired Parenting” focuses on early childhood education. This is one of the courses offered by OUM and this segment focuses on parenting issues, such as gadget addiction, how early parents should start early childhood education and many more.

The breakdown of these segments is clearly balanced and addresses different aspects of a student’s life, as seen in Figure 2.

Types of Programmes

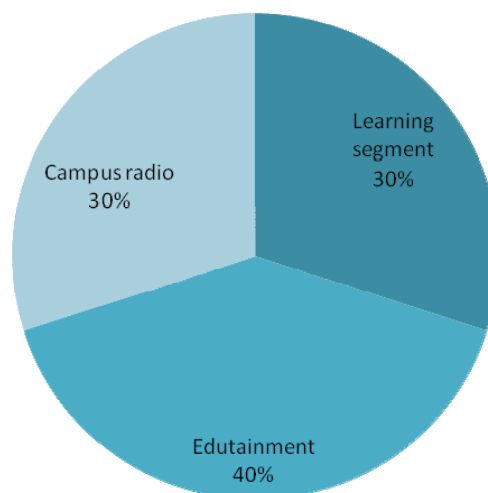


Figure 2: Types of segments on iRadio OUM

Adapting to the Challenges in the 21st Century: The Way Forward

iRadio OUM itself started as just a web broadcast. It later evolved into a podcasting service when content is edited and uploaded onto the then iRadio OUM website. These podcast were uploaded based on the based schedule and the podcasts were not categorized according to subject or faculty alike. Even the quality of the audio was not a priority due to bandwidth restraints.

However, with continuous research and development, iRadio OUM began to venture into a podcasting platform. This witnessed the birth of iCast (<http://iradio.oum.edu.my/icast/>), a dedicated website for audience to download the audio files. Further research and development during this time also resulted in the use of a different compression method to maintain the audio quality but minimise the file size. Not only that, iCast also incorporated subscription features, audience have the option of subscribing to iCast for free either via iTunes or RSS feeds.

Apart from just being delivered by its own platform via iCast, iRadio OUM podcasts called iCast, can also be found on OUM App (<http://oumapp.oum.edu.my/>) and OUM's iTunes U page. Not only that, as mentioned earlier, videos of interview segments held on iRadio OUM can also be viewed via OUMportal (<http://www.youtube.com/user/OUmportal>).

Trends in iRadio OUM

To observe the trends of iRadio OUM audience, an analysis was made of the number of visits to the website in January 2014 and January 2015. The aim of this observation is to determine whether the flow of visits has decreased or increased over the years. To track the usage of the audio learning materials produced, iRadio OUM deploys web analysis programmes, namely Google Analytics (<http://www.google.com/analytics/>), Webalizer (<http://www.webalizer.org/>) and Get Clicky (<http://clicky.com/>). These analysis programmes track the number of listeners, where they are from, the number of files downloaded and other useful information that can help iRadio OUM to strategise and improve on its product.

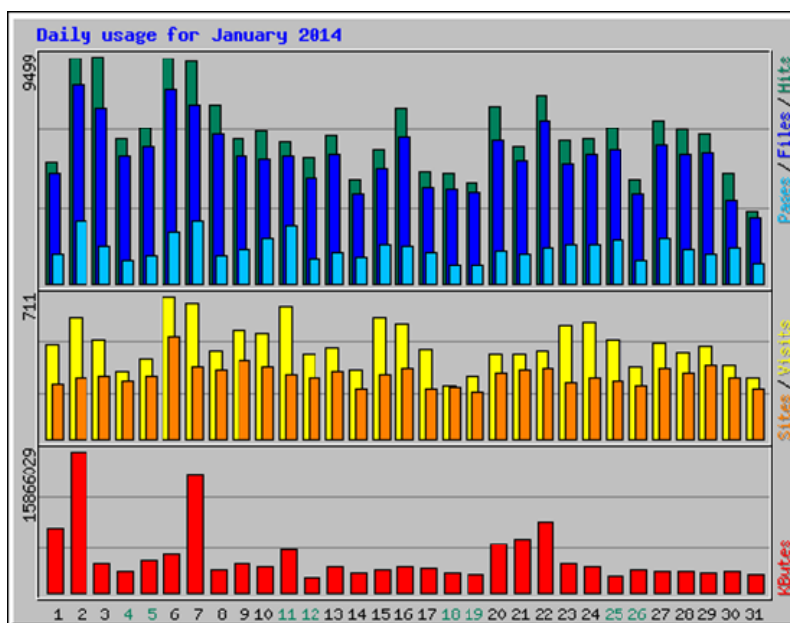


Figure 3: Daily usage for January 2014

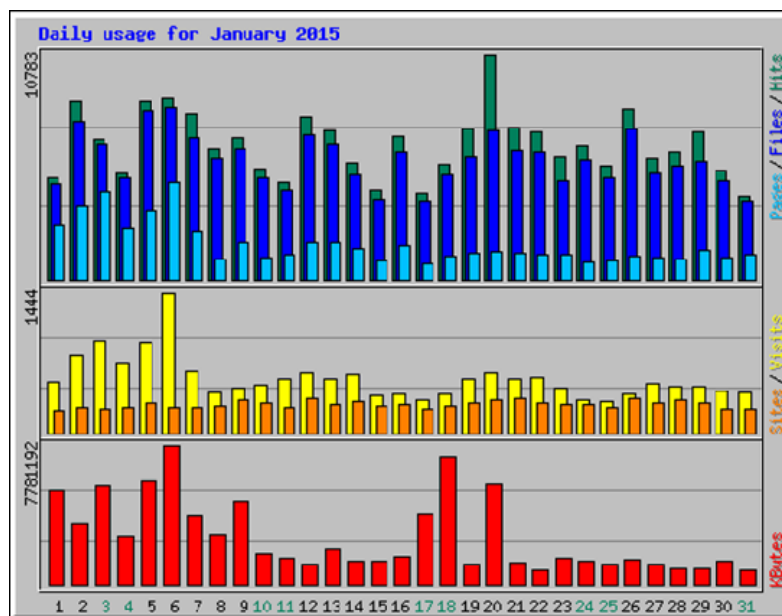


Figure 4: Daily usage for January 2015

To monitor the listening and downloading trend of iRadio OUM, an analysis was made of the number of visits in January 2014 and 2015. From figures 3 and 4, the data tabulated by Webalizer indicates that the number of visitors has slightly increased. This may be caused of the exposure that OUM has had with the launch of its OUM App and OUM via iTunes U. From this data set, it can also be observed that traffic to the website is high during the weekdays, especially on Monday and Tuesdays. This information helps iRadio OUM to identify what days to broadcast important segments to take full advantage of the high traffic.

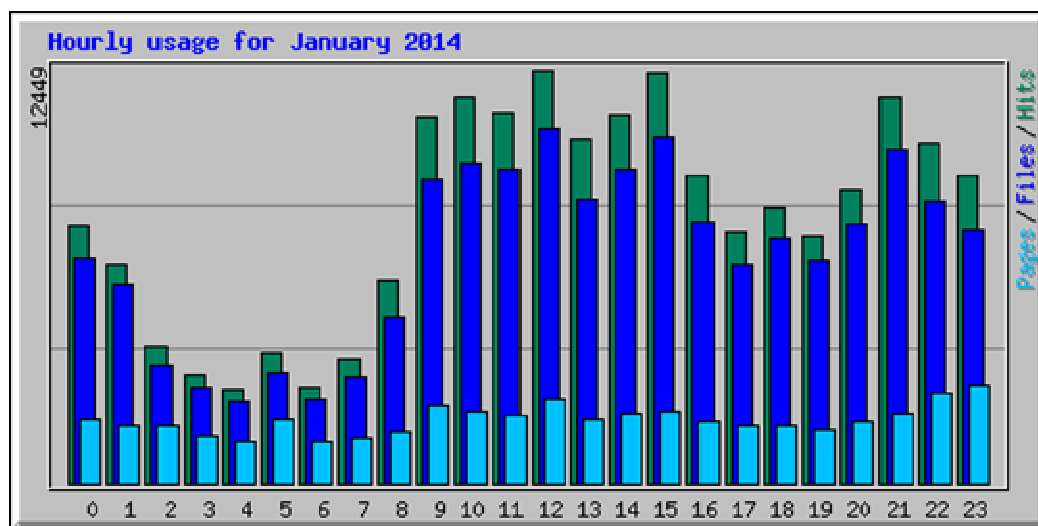


Figure 5: Hourly usage for January 2014

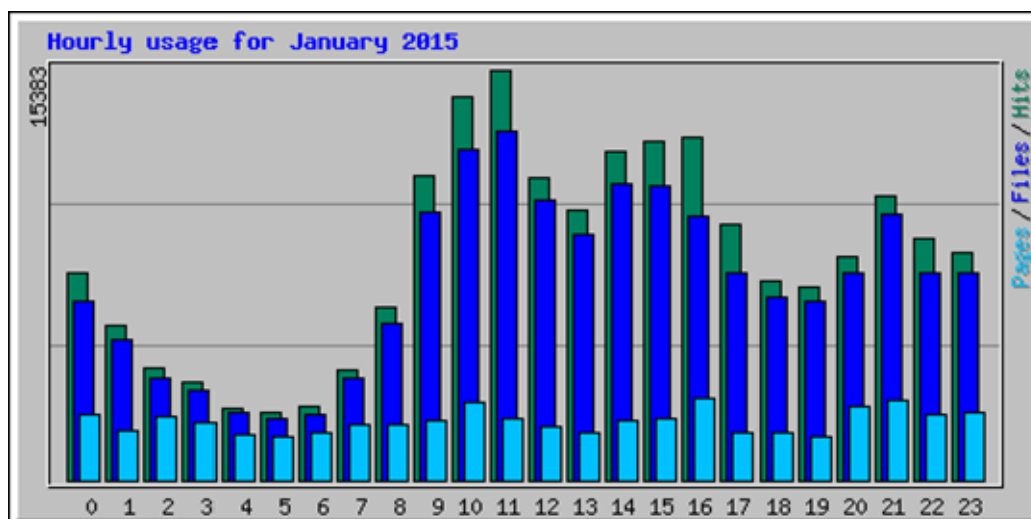


Figure 6: Hourly usage for January 2015

As can be seen in Figures 5 and 6, iRadio OUM has the most number of listeners during the day, specifically from 9am to 5pm, with the most visits occurring from 9am to 12pm. Over the time period observed, the amount of visitors during these peak hours has not changed significantly. This means that iRadio OUM can still place most of its important and interesting segments in the peak time slots. Also worth noting is that even after the broadcast hours, i.e. 5pm onwards, there are still visitors to the website. These visitors are most probably those who download our audio files. This data is also helpful to identify the impact of special activities, such as promotional events and special interviews.

Table 1: Monthly Usage Statistics

Month and Year	Total Monthly Visits	Total Download Size (mb)	Estimated No. of File Downloaded
January 2014	14,479	123534	6863
February 2014	14,103	56695	3149
March 2014	17,052	72775	4043
April 2014	15,864	98104	5450
May 2014	13,426	65315	3628
June 2014	12,407	47476	2637
July 2014	17,103	42129	2340
August 2014	18,302	55587	3088
September 2014	16,887	83871	4659
October 2014	15,885	85949	4775
November 2014	16,540	81250	4514
December 2014	18,837	84938	4719
January 2015	17,256	82679	4593

From the tabulated data in Table 1, we can pinpoint the number of visits, the total size of files being downloaded and a host of other data in determining the strategies concerning the development and growth of iRadio OUM. From Table 1, we can depict the trend as seen in Figure 7.

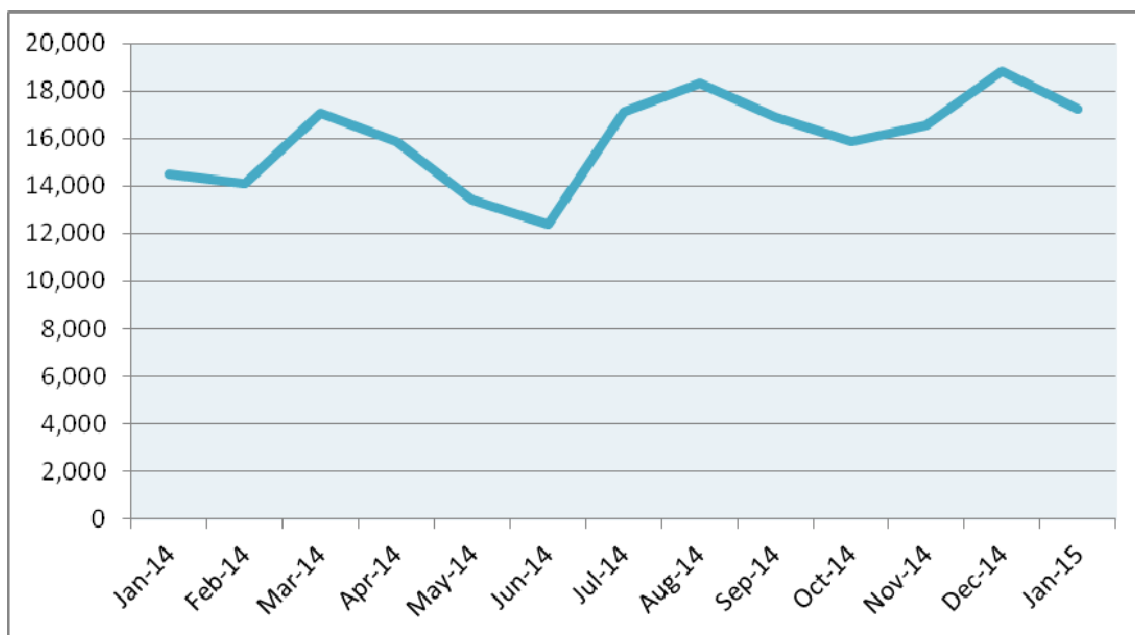


Figure 7: Total monthly visit from April 2013 to March 2015

From Figure 7, there are a high number of visits in the months August 2014 and December 2014. These months are peak months for the university's marketing efforts because the marketing team is trying to boost the number of new students for that semester.

iRadio OUM also uploads our podcasts to OUM iTunes U. To date, 42 titles have been uploaded and the response has been encouraging. From Figure 7, the "English for Oral Communication" podcast collection has the highest number of downloads so far, with more than 3000 downloads in less than 6 months (March to September 2015). iRadio OUM plans to continue uploading our content on this platform and making it available to the public for free, as part of OUM's OER efforts as well.

Top Collections	Mar 01, 2015 – Sep 10, 2015	Downloads
(Podcast) English for Oral Communication		3019
(Podcast) English for Workplace Communication		1166
(Podcast) Introduction to Psychology		711
Child Psychology		708
Principles of Behaviour Modification		699
(Podcast) Thinking Skills and Problem Solving		699
Educational Psychology		697
(Podcast) English for Written Communication		696
Guidance and Counselling		553
English for Science and Technical Purposes		511











Top Items	Mar 01, 2015 – Sep 10, 2015	Downloads
Episode 1 – Communcation: An Overview (Podcast) English for Oral Communication		676
Episode 2 – Oral Communication: Some Basic Pri... (Podcast) English for Oral Communication		330
2 – Oral Communication Some Basic Principles English for Oral Communication		292
Episode 3 – Active Listening Skills (Podcast) English for Oral Communication		280
Episode 8 – Public Speaking (Podcast) English for Oral Communication		278
Episode 10 – Making an Oral Presentation (Podcast) English for Oral Communication		271
Episode 9 – Preparing an Oral Presentation (Podcast) English for Oral Communication		261
1 – Communication : An Overview English for Oral Communication		258
Episode 5 – Speaking: Speech Training (Podcast) English for Oral Communication		249
Episode 4 – Listening in Formal/Academic Conte... (Podcast) English for Oral Communication		246

Figure 8: Download statistics from OUM iTunes U

Implications and the Way Forward

Data from this research study suggests iRadio OUM the improvement that can be implemented. Some of the strategies incorporated are:

- Adding more interactive elements** such as interviews with subject matter experts as well as exploring the use of video to enhance the day-to-day broadcast. iRadio OUM took a step further by also video-streaming these live interviews, enabling learners to view the video which will also be uploaded to OUMportal, OUM YoutubeEdu channel (<https://www.youtube.com/user/OUMportal>).
- Creating the **‘Interactive’ playlists via OUMportal** specifically for iRadio OUM content. A total of 283 videos are uploaded thus far, ranging from interviews with lecturers on highlights and difficult concepts from the modules as well as with OUM’s management and related units on university-related matters.
- Developing more **segments in English** as iRadio OUM has had visitors from 124 countries all over the globe. These learning materials or segments should also be more universal in nature, something that the general public can relate to, instead of a very technical and narrow discussion of a subject.

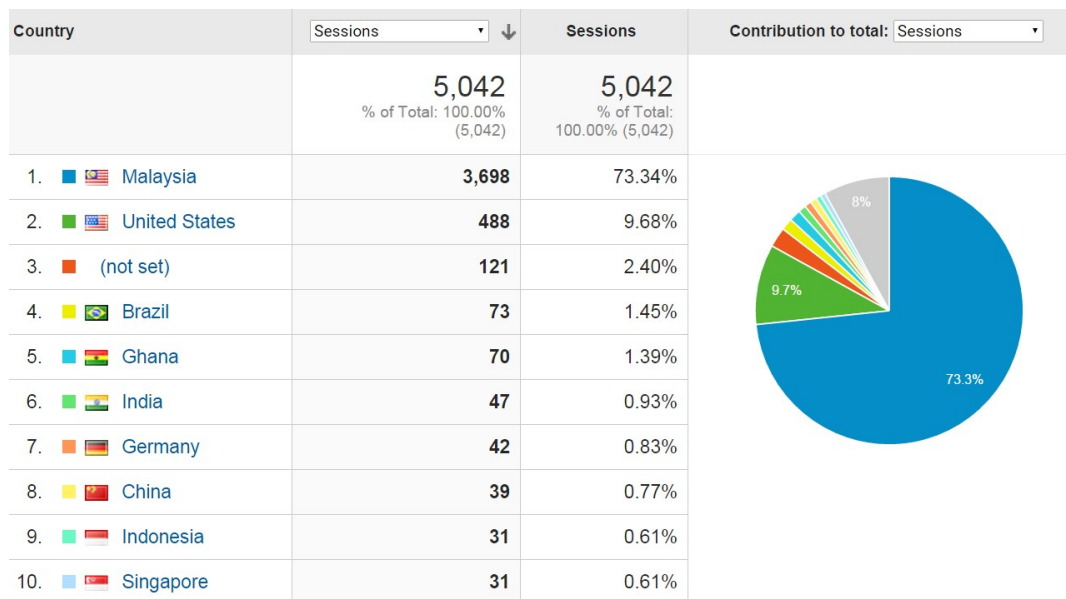


Figure 9: Origin of iRadio OUM website viewers from April 2013 to June 2015
(data from Google Analytics)

- (d) The learning materials developed has to be of **good quality** as it carries the OUM name and brand onto the world stage.

Conclusions

iRadio OUM plays an important role in developing e-learning materials for OUM. It adds value to the printed modules and addresses the different learning styles or preferences of the learners. Auditory learners may benefit greatly from the audio files provided and visual learners can truly take advantage of the videos uploaded via OUMportal.

iRadio OUM has moved to be more than just a web radio platform. All the learning materials developed via iRadio OUM is also repurposed and incorporated into other OUM's e-learning platforms, such as myVLE, OUM App and OUM iTunes U. This is also part of OUM's open educational resources (OER) efforts as all of the content uploaded is available for free.

OUM App was developed in 2012 and the app enables users to download learning materials via mobile devices such as iPad, iPhones, Android tablets and smartphones. The OUM App offers four different types of learning materials, namely coloured PDF, HTML, video lecture and iCast. Almost 150 modules are available via the OUM App to date and iRadio OUM is the producer of all the audio files uploaded to the app.

The development of OUM App also opened the door for OUM to collaborate with Apple. In 2014, OUM iTunes U went live. OUM is the first university in Malaysia to share its learning material via iTunes U. Initially, 17 modules were uploaded with learning materials such as coloured PDF, video lectures as well as content from iRadio OUM, such as our learning segment, learning capsule and audio books. To date, there are more than 5000 downloads from users all over the world.

The positive response from the content developed, broadcasted and uploaded so far has encouraged iRadio OUM to continue exploring new delivery platforms and development tools to further solidify its place as a quality audio learning material provider.

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DEVELOPING A TECHNOLOGY DRIVEN LEARNING MANAGEMENT SYSTEM FOR LEARNERS AFFLICTED WITH OSTEOGENESIS-IMPERFECTA: PROSPECTS AND CHALLENGES IN ODL

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Abstract

Osteogenesis Imperfecta (OI) is a rare congenital ailment characterised by bones that are very brittle and hence, prone to fractures. Such afflicted persons are often found left with little or no support from the Conventional system or the Open and Distance learning system to pursue their education. Therefore, most of them make them remain lifelong deprived of School Education or Higher Education. Such learners have very specific learning needs and therefore, it calls for appropriate technological interventions under the Open and Distance Learning mechanism to overcome the challenges faced by them due to their debilitating physical conditions. Quality research work in the field of innovative pedagogic technologies for such special learners in Open and Distance Learning (ODL) is either absent or a very nascent stage. This study is a novel effort in this direction to address the glaring gap in the existing practices with respect to providing appropriate technology based solutions to address the learning needs of the special OI learners through Open and Distance Learning. An empirical study was conducted among twenty special learners, suffering from this ailment to identify the most appropriate components for development of a suitable technology driven Learning Management System to effectively cater to their learning needs. Structured questionnaire was developed to elicit responses from this sample. Relevant information collected with respect the specific requirements of such special learners, gave valuable inputs and insights to develop a Learning Management System to cater to the techno-pedagogic needs of OI learners. On the basis of the study conducted, the researchers developed a Learning Management System, with an optimal mix of technology, enabling factors and other learning components. The segments of the study are,

1. *Special learning needs of students afflicted with Osteogenesis Imperfecta (OI)*
2. *Administration of specialised questionnaire and analysis of its results*
3. *Designing an appropriate technological package based on the results of the questionnaire.*

Key words: *Osteogenesis Imperfecta (OI), Learning Management System (LMS), moodle, gamification*

Introduction

Inclusive Education and ODL are twin brothers with neither being complete, at the expense of the other. This statement is seen in its observance in the case of meeting educational needs pertaining to the special needs of learners afflicted with Osteochondrodysplasia. The term Osteochondrodysplasia encompasses a wide variety of ailments observed among people of all age groups. The most noticeable among these ailments are Achondroplasia, Cleidocranial dysostosis, Fibrous dysplasia, Langer-Giedion syndrome, Maffucci syndrome, Osteosclerosis & Osteogenesis Imperfecta disease. Each of these diseases expresses different symptoms, patterns and learning problems. Among these ailments Osteogenesis Imperfecta disease creates widespread physical and mental debilities. India has a very high disabled population of 2.68 crore (census 2011), of which the disability in Movement accounts up to 20.3 percent. It is in this context that the present study aims at providing a technological solution to the long felt pedagogic needs of such learners.

Objectives

The objectives of the study are,

1. To identify the distinct demographic and pedagogic features of Osteogenesis Imperfecta learners.
2. To ascertain the specific technological and media related preference of OSTEOGENESIS IMPERFECTA learners.
3. To identify the specific features to be incorporated into a LMS for OSTEOGENESIS IMPERFECTA learners and to create a prototype for experimentation and implementation.

Research Questions

The following research questions were examined in detail by the researchers.

1. What are the distinct demographic and pedagogic requirements of Osteogenesis Imperfecta learners?
2. What are the technological and media related preferences of Osteogenesis Imperfecta learners?
3. What are the ideal technologies based learning interventions for students afflicted with Osteogenesis Imperfecta disease which could optimize their learning outcome?

Significance of the Study

The Osteogenesis Imperfecta disease is one of the rarest but most debilitating ailments affecting the human body and mind. Very often learners from this category find it difficult to elicit support from either the formal education system or from the Open and Distance mechanism. As a result, majority of them, are forced to remain outside the ambit of any kind of Education, be it School Education or Higher Education. The needs of such learners being of very special kind, demands targeted research and development of appropriate technologies under the distance learning mode to overcome the barriers imposed by their physical conditions and social constraints.

The Open and Distance Learning system vociferously proclaims its motto, as ‘reaching the unreached’. Recent research in the field of ODL repeatedly proves that the system has reached the reached more and left the unreached, as far as special needs are concerned. Yet the Open system with its policy towards negation of barriers, watering down of institutional bottlenecks and red tape along with openness in access, mode and curricula, present perhaps the best options of emancipation of these teeming learners. There is an utter lack of integration of pedagogy with technology at one level, and pedagogy and policy framing on the other. The current attempt is aimed at integrating the best in technology and pedagogy to arrive at an optimal **techno pedagogical** solution for Osteogenesis Imperfecta learners.

Literature Review

While campus-based universities in many countries cannot handle the huge numbers of potential students, it is the distance learning programs that can address the challenge of providing access to all, including those who cannot attend regular colleges as they could be employed, may have difficulties with access due to disabilities, or other such reasons (Gaskell and Mills, 2015). However, in order to address the concern of extending the opportunities for Higher Education to even the disadvantaged and the differently abled, the challenge for the ODL system lies in developing appropriate instructional strategies and delivery mechanisms suited to their capabilities by deploying media and technology that can enhance and enrich their learning experiences (Dikshit

et al 2002). Valenti et al (2002), Germann et al (2003) elaborately examined motor disabilities while Dincyurek et al (2011) investigated the problems of those who are with orthopedically impaired disabilities. Further, Ari and Inan (2010) have focused on disability of vision, hearing, orthopaedic/mobility and others. However, these works do not bring out pedagogic solution for the problems faced by the learners, nor do they conceive of a technology assisted intervention to solve the problems at hand.

Sepehr and Harris (1995), Wilding (1999) clearly described the special learning needs of students afflicted with disabilities.

Arslan & Inan (2010) examined the assistive technologies available for the students with disabilities. Based on the Turkish conditions, they examined the attitude of such learners towards the use of the said technologies.

Ashton (2002) describes slew of assistive technologies which can benefit people with disabilities. Newman and Uhlenkueken (2001) describe the appropriate environment for technological socialization of students with disabilities.

Heiman(2011) study on the extent and patterns of usage of web courses focused itself on the contribution of ICT in the field of inclusive education of those with disabilities. A comparison of 964 students at higher education level with and without Learning disabilities was undertaken. Using various scales like “perceptions of Learning through online usage”, “accessibility of campus computing”; “hopes scale” and “subjective well being scale” the efficacy of various adaptive technologies clarifying the familiarity of LD students with web- based assistive technologies on the students with & without learning disabilities was researched upon. They arrived at the conclusion that the use of technologies helped the learners with disabilities to attain goals.

Methodology

The questionnaire was administered online through Google form. Since computer facility was not available with some of the respondents, the investigators had to contact them over phone to elicit their replies. In spite of the best efforts of the researchers, a larger number could not be obtained due to the significant fact that only approximately 70 patients in the relevant category exists in the State of Kerala according to reliable information. As a result to start with itself, the universe was very small in Kerala.

Research Design and Sample

The study involved the collection of data with regard to both the learning attributes and technological possibilities associated with Osteogenesis Imperfecta learners. To collect relevant data on the former aspect, the researchers devised a Questionnaire with 62 questions, which was divided into three sections covering the important aspects of Educational abilities, proximity to Technology/Media and use of printed study materials. The latter aspect was covered under three segments, namely, Use of computers, Use of Mobile Technology and Desirable features in a learning platform. The questionnaire was responded to by 20 prospective learners afflicted with Osteogenesis Imperfecta disease spread across the country.

Data Analysis

The data obtained by administering the questionnaire on learners is given in table no.1. It is noticed that the difference in perception across different categories of respondents is not significant. The observed results are tabulated and presented below for easy reference.

Table 1: Desirability of Features to be Incorporated

Sl. No	Feature Desired	Male	Female	Urban	Rural	Has Formal Education	No formal Education
1.	Video Player	MostDesirable-89% LessDesirable-11%	Most Desirable-62% Desirable-13% Undecided-25%	MostDesirable-91% Less Desirable- 9%	Most Desirable-62% Desirable-13% Undecided-25%	MostDesirable-84% Desirable – 8% Undecided – 8%	Most Desirable – 72% Less Desirable – 14% Undecided – 14%
2.	Audio Player	MostDesirable-67% Desirable- 22% Undecided-11%	Most Desirable-67% Desirable-22% Undecided-11%	MostDesirable-73% Desirable-18% Undecided-9%	Most Desirable-67% Desirable-22% Undecided-11%	Most Desirable – 69% Desirable – 23% Undecided – 8%	Most Desirable – 72% Desirable – 14% Undecided – 14%
3.	Touch Friendly Digital Material	MostDesirable-67% Desirable-22% Undecided-11%	Most Desirable-67% Desirable-22% Undecided-11%	MostDesirable-73% Desirable-18% Undecided-9%	Most Desirable-78% Undecided-22%	Most Desirable– 70% Desirable – 15% Undecided – 15%	Most Desirable – 86% Undecided – 14%
4.	Voice Recognition Software	Most Desirable-50% Desirable-30% Undecided-20%	Most Desirable-45% Desirable-33% Undecided-22%	Most Desirable-64% Desirable-27% Undecided-9%	Most Desirable-89% Undecided-11%	Most Desirable– 70% Desirable – 15% Undecided – 15%	Most Desirable – 72% Desirable – 14% Undecided – 14%
5.	Upload Download Facility	MostDesirable-33% Desirable-44% LeastDesirable-11% Undecided-11%	Most Desirable-34% Desirable-44% Least Desirable-11% Undecided-11%	Most Desirable-37% Desirable-36% Least Desirable-9% Undecided-18%	Most Desirable-45% Desirable-44% Undecided-11%	Most Desirable– 46% Desirable – 46% Undecided – 8%	Most Desirable – 14% Desirable – 29% Least Desirable – 28% Undecided – 29%
6.	Chat Board	MostDesirable-78% Less Desirable-11% LeastDesirable-11%	Most Desirable-78% Less Desirable-11% Least Desirable-11%	Most Desirable-73% Desirable-9% Least Desirable-9% Less Desirable-9%	Most Desirable-56% Desirable-11% Least Desirable-11% Undecided-22%	Most Desirable– 62% Desirable – 15% Less Desirable – 8% Least Desirable – 7% Undecided – 8%	Most Desirable – 72% Least Desirable – 14% Undecided – 14%
7.	Digital White Board	Most Desirable-78% Less Desirable-11% Least Desirable-11%	Most Desirable-78% Less Desirable-11% Least Desirable-11%	Most Desirable-64% Desirable-18% Less Desirable-9% Least Desirable-9%	Most Desirable-56% Desirable-22% Less Desirable-11% Undecided-11%	Most Desirable– 54% Desirable – 31% Less Desirable – 15%	Most Desirable – 57% Least Desirable – 29% Undecided – 14%
8.	Digital Quizzes	Most Desirable-78% Least Desirable-22%	Most Desirable-78% Least Desirable-22%	Most Desirable-73% Desirable-9% Least Desirable-18%	Most Desirable-56% Desirable-22% Least Desirable-11% Less Desirable-11%	Most Desirable– 69% Desirable – 15% Less Desirable – 8% Least Desirable – 8%	Most Desirable – 42% Least Desirable – 29% Desirable – 29%

9.	2D - Imagery	Most Desirable-45% Desirable-22% Less desirable-11% Least Desirable-11% Undecided-11%	Most Desirable-45% Desirable-22% Less desirable-11% Least Desirable-11% Undecided-11%	Most Desirable-55% Desirable-18% Less Desirable-9% Least Desirable-9% Undecided-9%	Most Desirable-56% Desirable-11% Less Desirable-11% Least Desirable-11% Undecided-11%	Most Desirable-38% Desirable – 23% Less Desirable – 31% Undecided – 8%	Most Desirable – 43% Least Desirable – 57%
10.	3D - Imagery	Most Desirable-56% Desirable-11% Less desirable-11% Least Desirable-11% Undecided-11%	Most Desirable-56% Desirable-11% Less desirable-11% Least Desirable-11% Undecided-11%	Most Desirable-55% Desirable-18% Less Desirable-9% Least Desirable-9% Undecided-9%	Most Desirable-67% Desirable-11% Less Desirable-11% Least Desirable-11% Undecided-11%	Most Desirable-62% Desirable – 8% Less Desirable – 15% Undecided – 15%	Most Desirable – 42% Desirable – 29% Least Desirable – 29%
11.	Wiki	Most Desirable-45% Desirable-22% Least Desirable-22% Undecided-11%	Most Desirable-45% Desirable-22% Least Desirable-22% Undecided-11%	Most Desirable-37% Desirable-36% Least Desirable-18% Undecided-9%	Most Desirable-56% Desirable-11% Less Desirable-11% Least Desirable-11% Undecided-11%	Most Desirable-46% Desirable – 23% Less Desirable – 23% Least Desirable – 8% Undecided – 14%	Most Desirable – 14% Desirable – 29% Least Desirable – 43% Undecided – 14%
12.	Access to Online Journals	Most Desirable-33% Desirable-45% Least Desirable-22%	Most Desirable-33% Desirable-45% Least Desirable-22%	Most Desirable-27% Desirable-55% Least Desirable-18%	Most Desirable-34% Desirable-22% Least Desirable-33% Undecided-11%	Most Desirable-39% Desirable – 38% Least Desirable-23%	Desirable – 42% Least Desirable – 29% Undecided – 29%
13.	Playback Sessions	Most Desirable-56% Desirable-33% Undecided-11%	Most Desirable-56% Desirable-33% Undecided-11%	Most Desirable-55% Desirable-36% Undecided-9%	Most Desirable-78% Desirable-11% Less Desirable-11%	Most Desirable – 61% Desirable – 31% Undecided – 8%	Most Desirable – 57% Desirable – 14% Less Desirable – 29%
14.	Discussion Forums	Most Desirable-45% Desirable-22% Least Desirable-22% Undecided-11%	Most Desirable-45% Desirable-22% Least Desirable-22% Undecided-11%	Most Desirable-46% Desirable-27% Least Desirable-18% Undecided-9%	Most Desirable-45% Less Desirable-11% Least Desirable-22% Undecided-22%	Most Desirable – 46% Desirable – 23% Least Desirable – 23% Undecided – 8%	Most Desirable – 43% Less Desirable – 14% Least Desirable – 29% Undecided – 14%

Based on the data received further analysis was done on the technopedagogic preference of the Osteogenesis Imperfecta learners and suitable media was incorporated into the moodle.

Table 2: Features Incorporated in the LMS

SI No	Feature to be incorporated	Over All Response	Applications in which the feature is incorporated in the LMS
1	Video Player	80%	Found in Virtual Classroom & other applications
2	Audio Player	65%	Found in Virtual Classroom & other applications
3	PDF Reader	30%	Most Moodle Applications are configured to read pdf documents
4	Touch friendly digital material	75%	Moodle is Smart Mobile compatible
5	Text to Speech	70%	Text to speech
6	Bluetooth	20%	Device enabled
7	Upload/Download facility	40%	Enabled in Virtual classroom, Assignment package, Online labs
8	Chat board	60%	Enabled in Moodle platform and Virtual Classroom
9	Digital white board	55%	Virtual class
10	Digital quizzes	60%	Digital Quiz
11	2D Imaging	40%	Virtual lab
12	3D Imaging	50%	Virtual lab
13	Wiki	30%	Enabled in the Moodle
14	Access to online resources	25%	Enabled
16	Playback	65%	Enabled in all functional features
17	Discussion forums	45%	Enabled

Discussion

Specific requirements of a LMS specifically developed for Osteogenesis Imperfecta (OI) Learners Any educational course that is to be designed and delivered for effective teaching-learning has to be structured and developed considering the specific learning needs and characteristics of the target group for whom it is to cater to. On the basis of the responses obtained from the Osteogenesis Imperfecta learners with regard to their learning needs, medical characteristics and media habits, the researchers arrived at the following requisite features that should be enabled in the Learning Management System:

1. Flexibility and Convenience factor - Since the OSTEOGENESIS IMPERFECTA learners suffer from locomotor disability, and in extreme cases, from immobile conditions, the LMS prepared for them has to factor in, their convenience and flexibility. This meant that a technology enabled learning environment has to be designed, that “brings their classroom to their beds”, thereby giving an opportunity for such early drop outs to regain their long lost educational dreams.

2. Multiple device compatibility of the LMS - Since the OSTEOGENESIS IMPERFECTA respondents were found to use multiple devices such as Computers, Mobile phones, apart from other media devices such as Televisions and Radio, they were very familiar with the use of electronic and related equipments. Therefore, the LMS had to be made available for them, through, one or more of these equipments which are already an integral part of their daily lives.
3. Multi-media Integrated Instructional System - Many OUs rely heavily on the Printed Study Material and limited face to interaction at LSCs. Other multi-media are considered as supplementary. However, considering the very nature of Osteogenesis Imperfecta learners who are constrained not to travel, a rich learning experience has to be structured by considering the optimum use of multi-media such as audio, video, special effects such as animation touch sensitive material etc. so that sensory experiences are integrated into the LMS.
4. Student Motivation and Engagement - Since most of the OSTEOGENESIS IMPERFECTA persons have been afflicted with the disease right from childhood and have not been participants of the traditional school or college systems, the LMS should be so designed to constantly sustain their motivation and as well have provisions to ensure Student engagement and to reduce to drop outs.

In order to ensure student retention, it is desirable to have mechanisms in the LMS to track the learners and their progress in their learning related activities.

5. Need for Interaction –the physical attributes of the Osteogenesis Imperfecta learners cut them off from the main stream society. It would be ideal to offer a LMS that caters to their needs for socialization. It was therefore felt that social media and other kinds of communication via internet amongst peers and the teachers, within the LMS, in real time or otherwise becomes essential, to give them the feeling of belongingness and being part of the mainstream.
6. Cost factor of developing a LMS - It is ideal to minimize the cost of developing and maintaining a LMS so that as far as possible little or no costs are not passed on to learners. This has to be more so, when designed for differently abled persons such as OSTEOGENESIS IMPERFECTA learners, most of who do not have sound financial backgrounds.
7. Media habits and the need for Entertainment – The media habits of these OSTEOGENESIS IMPERFECTA learners provided an interesting insight that they spend a good amount of their daily routine listening/ watching the radio/ television to primarily meet their needs for Entertainment and Information/ Knowledge. This helps them to bring in cheer into their mundane routine.

Therefore, in order to be effectively taken up and pursued by these Osteogenesis Imperfecta learners, the LMS has to be designed to cater to their needs for entertainment, apart from imparting knowledge. Interesting features have to be built-into the LMS that provides **edutainment** or educational entertainment. This would enhance the appeal of the LMS amongst the Osteogenesis Imperfecta learners. Therefore, we need to have LMS content designed primarily to educate with an accompanying entertainment value.

Considering the above requirements of the LMS for Osteogenesis Imperfecta learners, the researchers surveyed the existing technologies available.

Based on the data obtained under various heads, the researchers set out to formulate appropriate technological solutions to cater to the needs of Osteogenesis Imperfecta learners. A preliminary survey was made of the available technological solutions. It was found that platform such as **A-View**, **WizIQ** etc. are basically aimed at normal learners and do not provide a great deal of attention towards inclusive education for persons afflicted with bone diseases. Further, they also did not cater to all the technological requirements revealed by the respondents to the questionnaire. Consequently, the researchers were forced to look at the

possibility of amalgamating diverse technological packages that provided learning solutions when combined together to meet the requirements of Osteogenesis Imperfecta learners. After a thorough survey, we found that such an amalgamation is possible through MOODLE.

The Moodle incorporates a large number of plug-ins each catering to a different and unique learning requirements of the prospective students. The philosophy of incorporation therefore is different in each case. As far as incorporation of the assignment module is concerned, it draws its inspiration from Holmberg's Guided Didactic Conversation philosophy. The learner being at a distance needs the feeling of being guided by a teacher through a conversation initiated either through the face to face mode or through technological interventions. Needless to state the new generation learner is constrained by his existential realities from attending a regular face to face institution. The option available with him is Open Learning from which the distance component is obliterated through the use of the assignment module providing him both synchronous as well asynchronous mode of interaction with the teacher. All aspects of traditional Distance Learning such as giving comments and feedback are encompassed with ease.

Features of the LMS

The LMS is structured with the following features as presented below:

1. *Content Development:*

Content development is the most important aspect in developing an LMS. As per prevailing theory, Digital Content for learning has to be copious, interactive, imaginative and self supporting. As a result an ideal new generation learning module has to provide solutions in both synchronous and asynchronous modes. Based on this cardinal principle, the following components were incorporated into the moodle.

- (a) **Lessons Module** - The beauty of technology when combined with the certainty of human mind can result in unexplored avenues for the learning community. The lesson module is one such instance. It brings forth multiple options for both the teacher as well as the student. These are (i) Text based applications to be uploaded and downloaded (2) Voice based applications primarily from the side of the teacher (3) Visual applications for the learner and teacher. The teacher is in a position to device teaching material in any of these modes or through a combination of these modes and deliver it through Moodle. This gives the learners a vision much better and deeper than any text book on earth.

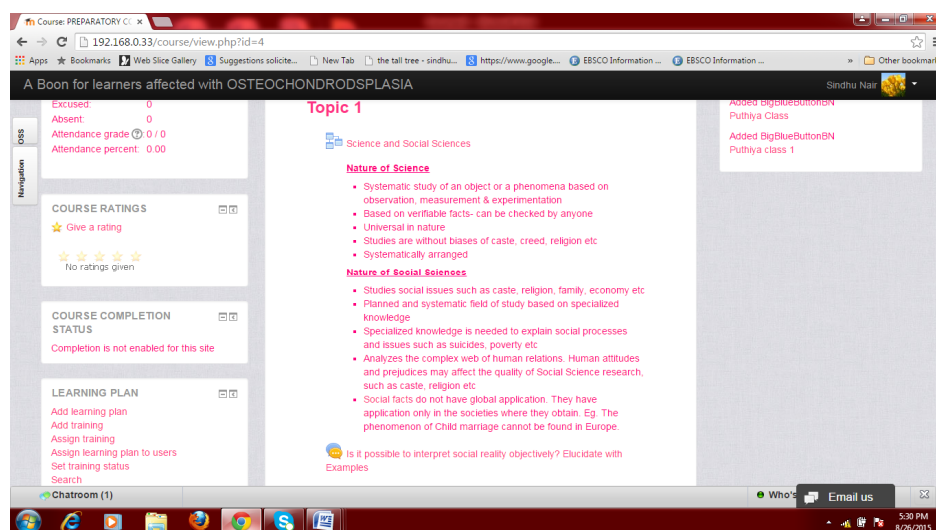


Figure 1: Lesson module

- (b) **Wiki** - The Wiki module enables the participants to add and create web pages containing relevant information. It is a collaborative instrument which enables editing by learners as well as teachers. This is most useful for providing services such as group lecture notes, planning schemes, creation of online books and so on.
- (c) **Glossary** - This is an activity module which enables the participants, teachers and administrators to create and maintain a list of definitions or to collect and organise resumes and information. If the auto-linking filter is enabled, entries will automatically be linked where the concepts or words appear.

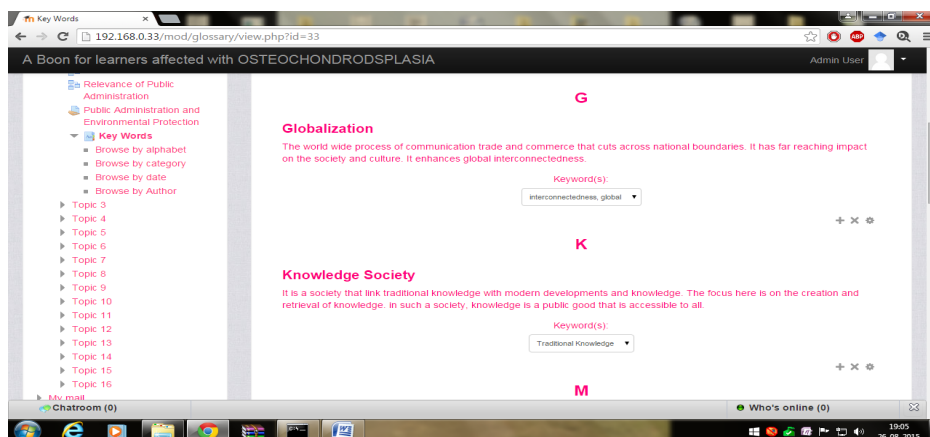


Figure 2: Glossary

- (d) **Virtual Classroom** – A boon of integrated technologies, the Virtual Classroom lies at the heart of our MOODLE. A technology with multiple plug-ins, it enables the student to view live class sessions, be an active participant in the same, use value-added services such as White board, real time chat, record sessions, take advantage of real time interaction, upload/download presentations, interact with peers, benefit from polls and take advantage of guided didactic conversations with the virtual teacher. The virtual teacher benefits from reaching out to distant learners and in providing controlled classroom sessions. He can even conduct supervised examinations with little chance of the student resorting to malpractices. The fact that controls can be easily transferred to the users by the administrator makes the mechanism very attractive. Our Moodle is bolstered with the incorporation of three time tested digital platforms - WizIQ, and Big Blue Button. In the unlikely event of the failure of any one of the platforms or learner disaffection with the same, the other virtual classrooms can be used.

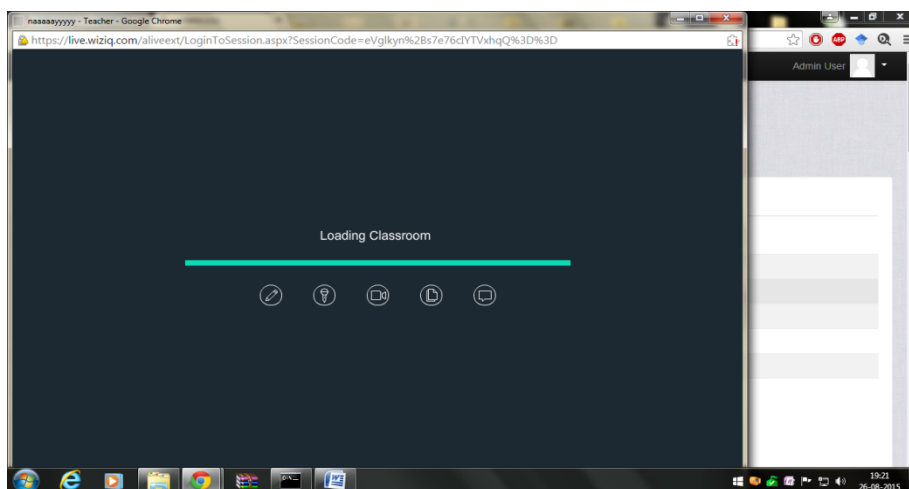


Figure 3: Virtual Classroom being set up

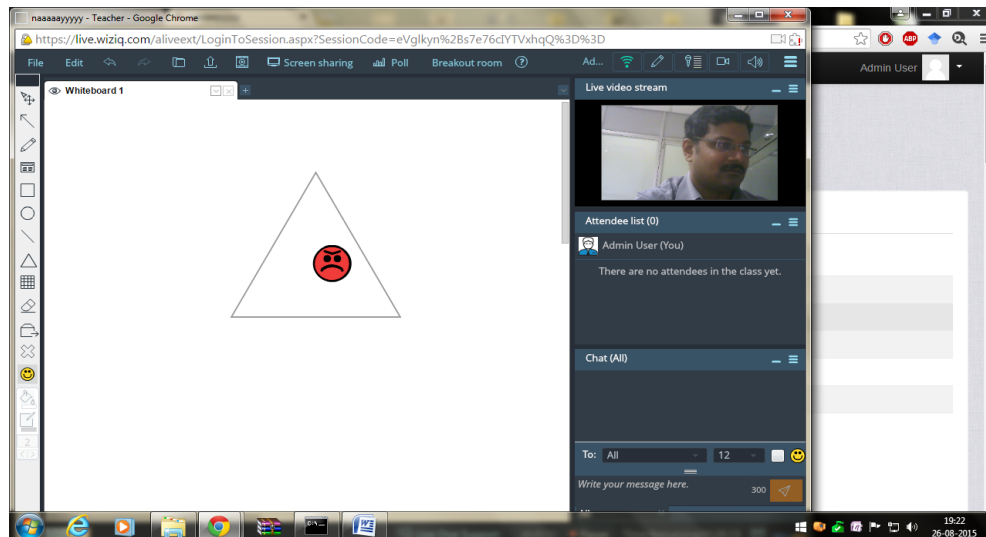


Figure 4: Virtual Classroom in progress

2. *Student Assessment Mechanisms*

The most important aspect of a learning program is how effectively the learners are assessed on various verifiable parameters. Contemporary theories on student assessment insist that assessment should be part of a holistic package and not a separate module distinct from other elements of the package. As a result the play way method of pedagogy leading to assessment of student attainments had gained currency in the previous decades. Assessment through non traditional methods such as games is an integral part of this strategy. This moodle seeks to incorporate the best practices to obtain the optimal results.

- (a) **Assignments** - Assignments are an integral part of any distance learning scheme. As stated by Holmberg, good distance education resembles a guided conversation aiming at learning. The presence of traits of conversation aids and facilitates learning of a distance learner. There is constant interaction between the supporting staff and the learners. As in conventional distance education, in the digital learning environment also, the assignment module brings the learners in contact with the teacher and they engage in a guided didactic conversation. The Moodle enables the student to upload his responses using any of the format- simple text, voice recording, video recordings and any relevant combination of these. This feature enables a patient afflicted with Osteogenesis Imperfecta disease to avoid the pain, trials and tribulations of writing. The teacher also finds it research to evaluate a voice or video recording rather than the illegible writing of a learner laboring under the debilitation of Osteogenesis Imperfecta. Just as the student achieves autonomy through digital interface, so also the teacher gets the freedom to grade assignment under objective criteria laid down. In case where, auto-response is activated, the grading takes place without human intervention and thereby autonomy and accountability are ensured. Digital quizzes are one such mechanism which in unique to such platforms.

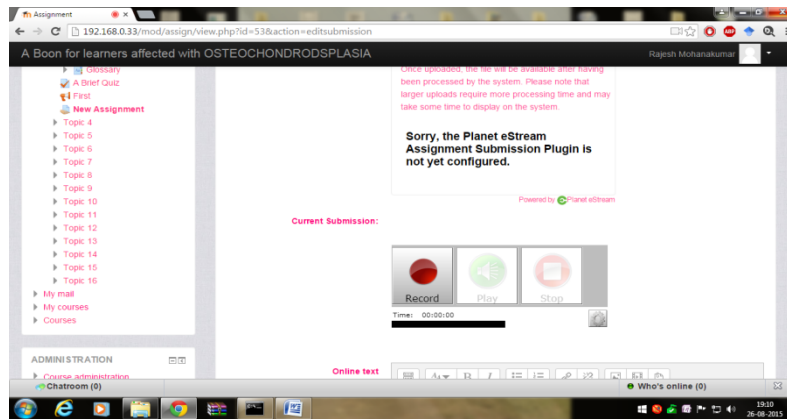


Figure 5: Assignment module

- (b) **Exam Module** - Examinations are the culmination of efforts of all stakeholders in any educational system. This is equally true of Moodle where the plug-ins enable supervised examinations. In JAVA enabled systems, the only protection to be taken is to ensure that the coding does not reach the learner who may read the code and hack an examination module. If access is provided for limited time and under controlled and supervised environment, the examination module of Moodle is stable and reliable. The supervised examination module of our Moodle enables the teacher to set question paper digitally, deliver it to the student under a controlled environment and evaluate responses in the most fool proof manner. Furthermore, there are multiple evaluation mechanism as well – peer grading, external grading, auto grading, teacher grading and even self-grading as per the requirement of the course of study.

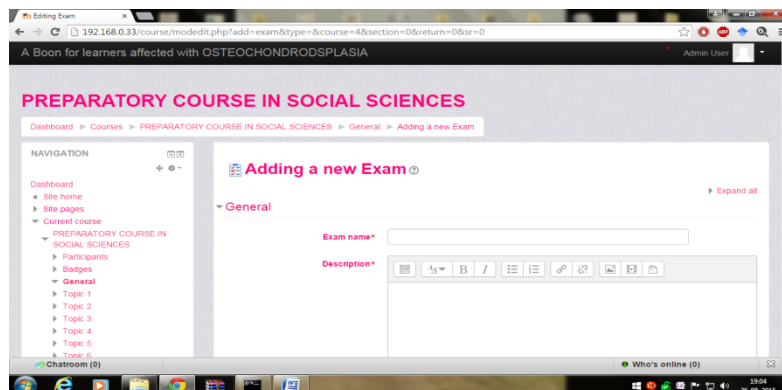


Figure 6: Exam module



Figure 7: Analytic graphics of assignment submission of learners

- (c) **Gamification** - One of the salient points received as response to our Questionnaire was the importance of entertainment and sensory appeal of learning components. With the onset of Computer games, the World over, Gamification as a technique for student retention has gained currency. It is indeed arguable that a single hour of exposure to “The Age of Empires” will teach more of American Civil War than an entire year spend at a K10 school dwelling on history. In this context, the researchers thought it appropriate to introduce Gamification as a tool to enhance learner attainment and student retention. The Moodle plug-ins provides ample opportunity for such a mechanism to take effect. It may be emphasized here that the learners afflicted with Osteogenesis Imperfecta do not suffer from intellectual disabilities and are fully equipped to undergo training programmes, based on popular games. The researchers reached this conclusion on the basis of the fact that 75% of the learners have medium to high abilities in English language, 65% have reasonably high abilities in Mathematical comprehension and 80% uses touch friendly mobile phones. Further, great emphasis was laid by the learners on entertainment related aspects while watching mass media (TV, Radio etc.). Consequently, it was felt that learning through entertainment shall be greatly beneficial to a learning Community consigned to the four walls of their homes with little exposure and means of entertainment. The Gamification plug-in was incorporated into the Moodle with the following sub components:-

- (i) **Crossword Puzzles:** Ever since Crossword Puzzles were created by Arthur Wynne in Liverpool, it has become a source of intellectual enrichment along with entertainment. For the Osteogenesis Imperfecta students, reliance on monologues text books, especially after being cut-off from students for long periods of time, is a monotonous proposition. This Moodle based game takes words from one of the many sub-segments of literature uploaded by the teacher on the Moodle and generates a random cross Word Puzzle. The teacher is at liberty to set maximum and minimum rows and columns in the Crossword according to the level of student accomplishment. Every Crossword is dynamic and so it presents a different set of questions to each student.

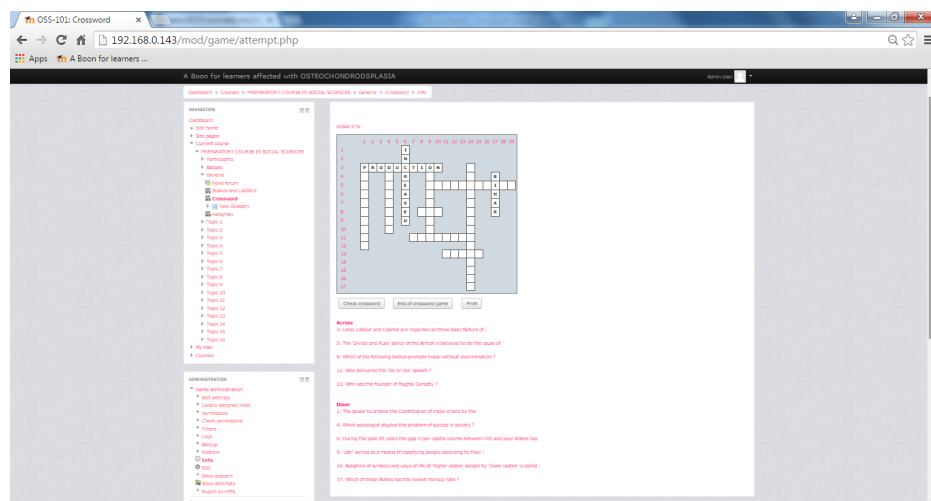


Figure 8: Crossword Puzzle

- (ii) **Hangman:** Another interesting game with immense learning potentialities is Hangman. Like the Cross word, the Hangman takes words randomly from glossaries or Quizzes, given in the Moodle and creates a Hangman puzzle. The teacher can set the difficulty level by indicating the number of words, each game may contain.

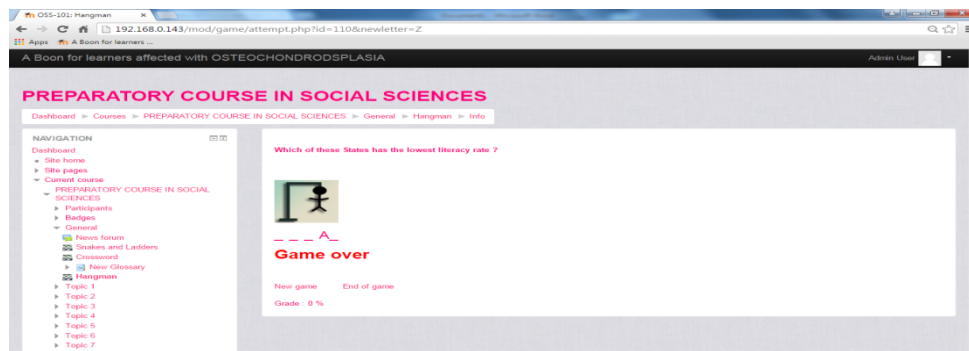


Figure 9: Hangman

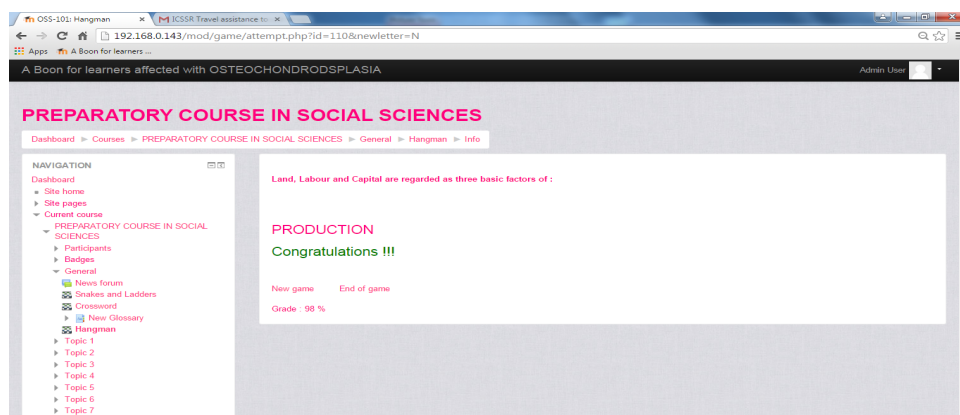


Figure 10: Hangman

- (iii) **Millionaire:** Based on the popular TV shows, broadly titled as who shall be the Millionaire, a Moodle plug-in has been developed by Vasilis Daloukas. This game approximate the TV show broadly and questions are displayed to the learner in random order. If the student answers the question correctly, he moves up to the next level of hypothesized ‘earning’ and gradually progresses to be an educational millionaire. If a question is answered wrongly, the game ends then and there, indicating that the learner needs to reinforce his understanding on the subject. This provides a challenge to the learner to perform better the next time by going thoroughly into his course material.

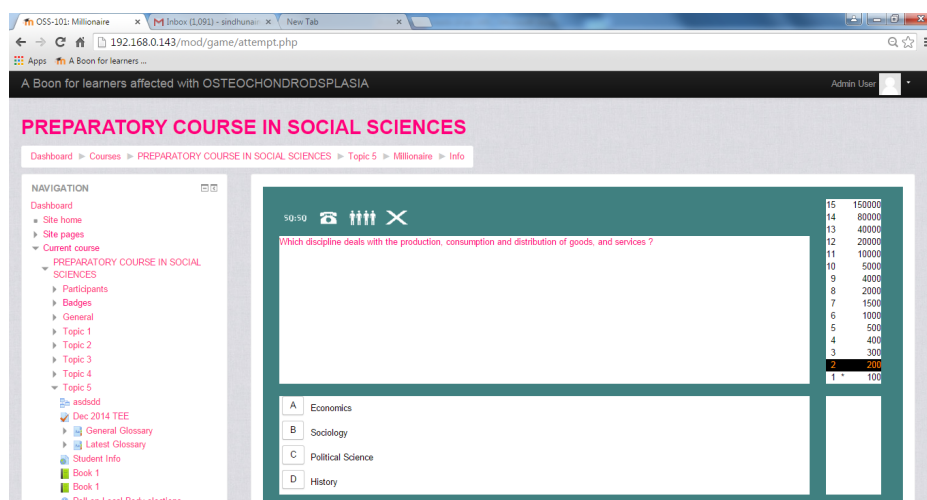


Figure 11: Millionaire

- (iv) **Snake and Ladder:** This game which finds reference in the documents cited as early as 2nd century BC in India, is an interesting addition to Moodle based Gamification. Moving apart, from the traditional game, the gamer has programmed inverted shakes to reinforce and subliminate the learning process. A question is displayed to the learner which if answered correctly, displays a number on the dice and the game moves up that number displayed on the dice. Needless to state, a correct answer is rewarded while an error ensures the wrath of the preying shakes. The higher the level of knowledge, the easier it is to complete the game. If the understanding of the subject matter is limited, additional attempts would be required by the learner to bring the game to conclusion. Thus, progresses the game. The game also displays agility by posing questions either on a multiple-choice basis or on an open ended basis.

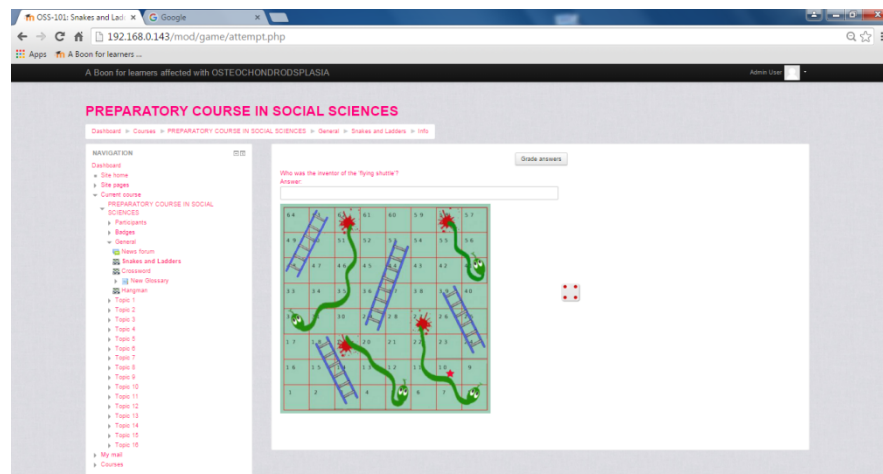


Figure 12: Snake and Ladder

- (v) **Books of Questions:** The book of questions provides an ideal platform to present drab topics in an interesting manner while retaining learner interest. The questions are given as chapter of book and the learner progresses to the subsequent chapter only on successful completion of a given chapter. This provides not only a challenge to the learner but also a higher level of information which will stand the learner in good stead when it comes to final assessment.

3. *Interactive Features*

One of the major aspects that make education distant is the absence of interaction between teacher and learner and among learners themselves. The LMS caters to Osteogenesis Imperfecta learners who are generally cut off from their peers and thus have a feeling of isolation. The moodle attempts to bridge this gap by providing avenues for both synchronous and asynchronous interaction. The following attributes of the moodle are noteworthy in this regard.

- (a) **Moodle text SMS service:** The text SMS service is a salient feature of our Moodle which enables the teacher to remind the students not only about urgently constituted tasks but can also be used as a motivating device to enable student retention.

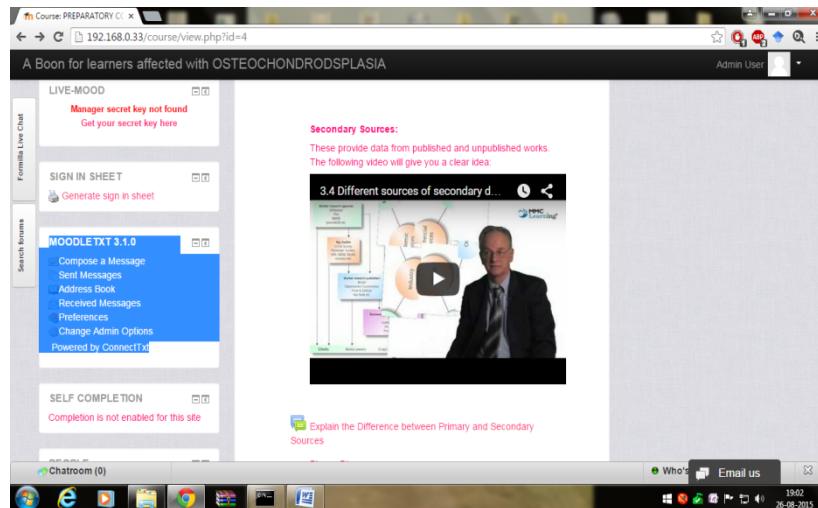


Figure 13: Moodle text sms service

- (b) **Virtual Chat facilities:** We have added a good number of chat modules with the Moodle, with the aim of providing real time interactivity. Apart from the normal text based chats, the Moodle created by us, also has a viable video chat. This can be an effective mechanism for peer interaction in a distance education system that hindrance by the problem of accessibility to learning centres where students can meet and interact. Undoubtedly, this is a boon for students with bone ailments.
- (c) **Discussion Forum:** The feeling of isolation of a learner is brought to an end by discussions with his peer and teachers. In a traditional classroom setting, such a mechanism is easily effected, but not so in distance education. Consequently, the student feels as an island unto himself and is often a major reason for drop out. The incorporation of discussion boards and e-mail communication facility acts as a panacea for the isolated learner.

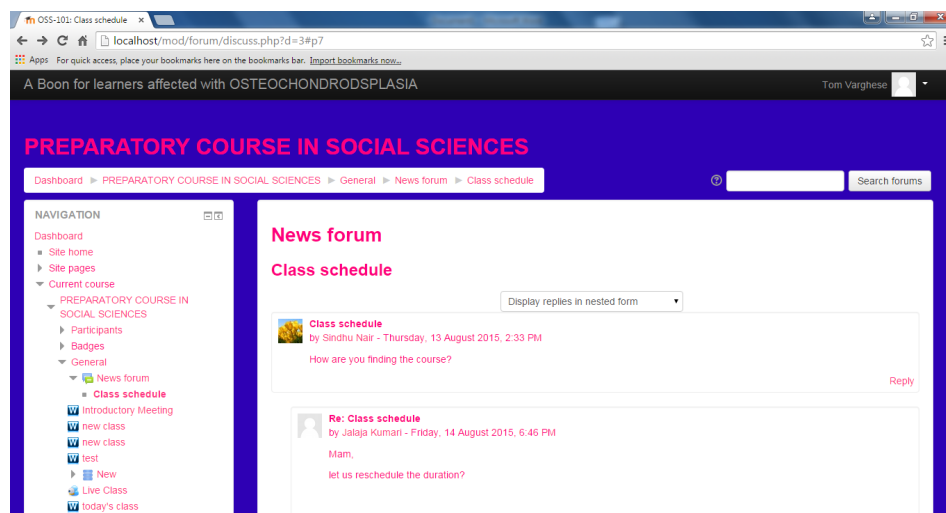


Figure 14: Discussion forum

It also has features such as E-mail and chatboards.

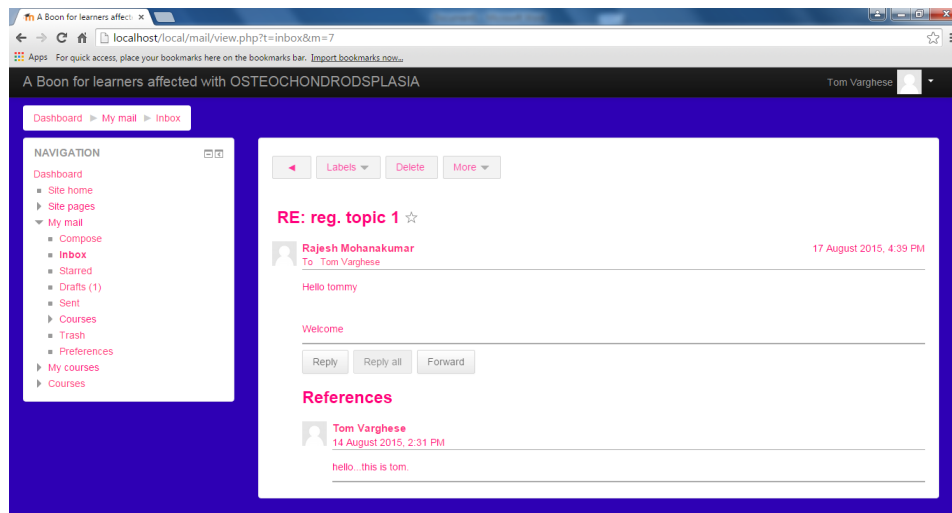


Figure 15: E-mail

4. Administration & Student Tracking

A good LMS must have adequate mechanisms to administer student related activities and track his progress. The following modules have a seminal role to play in this regard.

- (a) **Attendance module:** The attendance module provides an instant application to take attendance, to map out deficiencies in attendance of learners and to prepare a report on attendance of learners which shall be highly beneficial to teachers who monitor the retention of students. An auto sign-in attendance sheet is also generated to register student presence. This is aided by the GISMO interactive student monitoring and tracking tool that extracts data from Moodle course management system. This tool generates various graphical representations which give the teachers an idea of the learning activities of students. To further aid student tracking, the Moodle has been bolstered with the plug-in, Analytics Graphs which given a clear picture of - content access, assignment submission, quiz submission, hotspot submission, hit distribution etc.

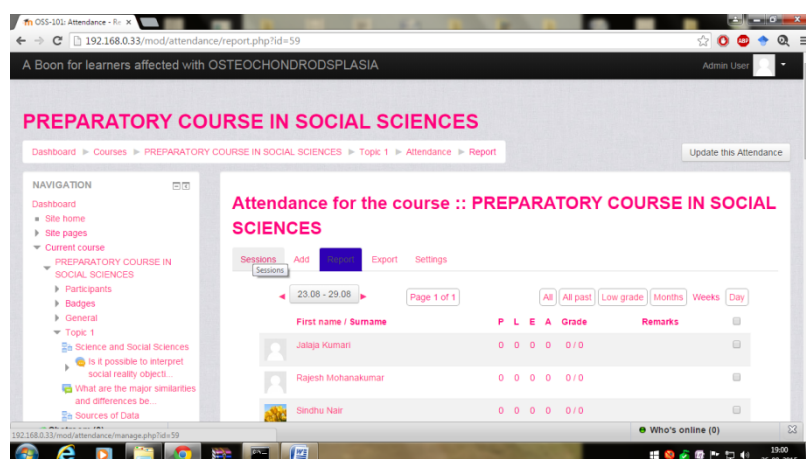


Figure 16: Attendance module

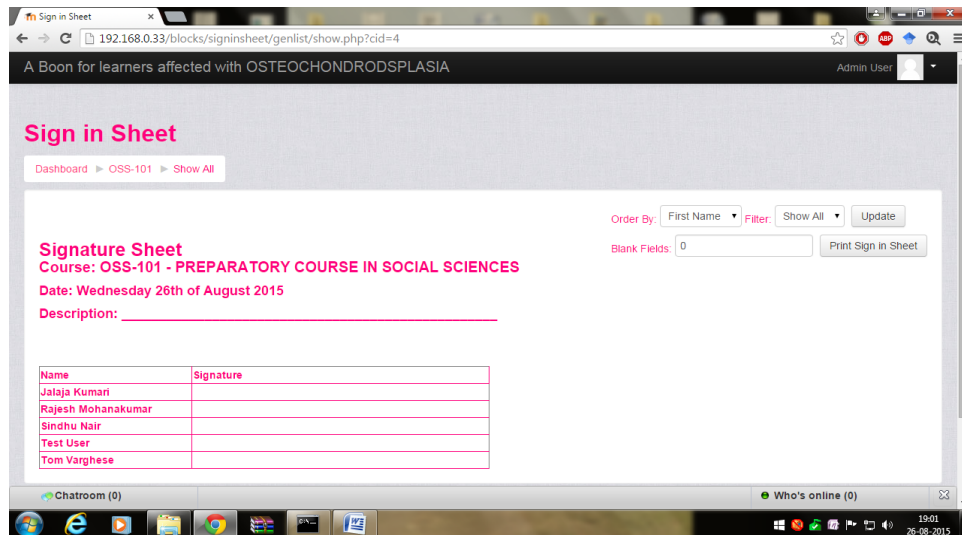


Figure 17: Attendance Sign-in Sheet

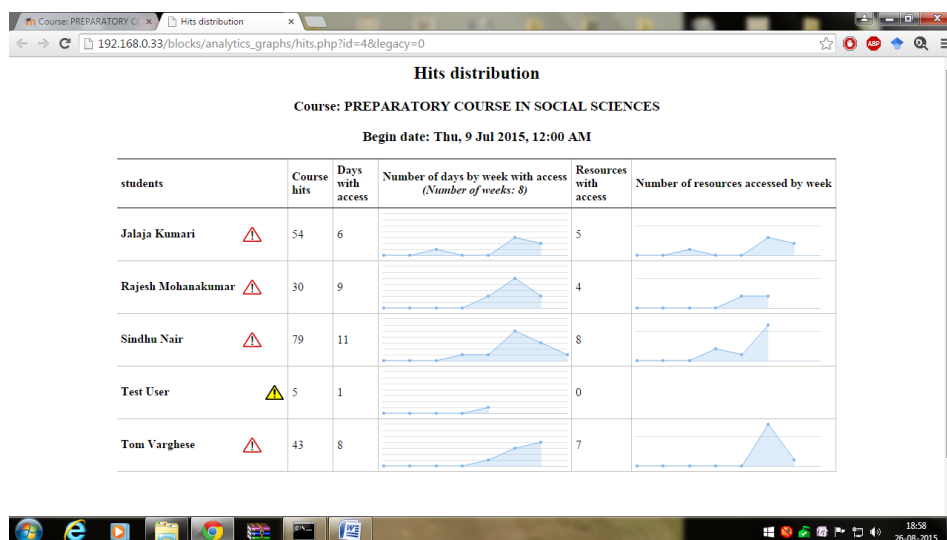


Figure 18: Analytic graphics of hits distribution

Pedagogic Implications of the Moodle

A large number of educational implications emerge from the moodle. While the implications of most of these components have been analyzed independently in various literatures, very rarely has an integrated analysis been attempted. Rarer is an analysis with a focus on educational Gamification. Leaving aside aspects on which copious literature is available, we present below less analyzed aspects and their implications.

The large scale use of games is hitherto, a new concept in the World of learning. While feeble attempts have been made in various quarters, no concerted attempt has been seen, at least in Asia, to integrate it as a part of main stream studies. Though constructivism has been recognized as a major practical proportion in the Teaching Learning Process, the importance of Gamification in the process of educational construction has not caught the attention of policy makers. The attempt of the Regional Centre is to make Games, an integral part of student progressive and retention. Further, Gamification can also be accepted as an integral part of student assessment. In this regard, the module of Games created by Vasilis Daloukas provides an excellent platform. The salient

aspects of these games provide a pedagogic angle can be analyzed as follows with special reference to Osteogenesis Imperfecta learners:

1. **Span of Attention:** Eminent psychologists have brought on record that monologous, single framed and uni-medial instructional technique provides least span of attention. This is where; Gamification provides unique and unexplored vistas. A student converts into the religion of games will find the components not only inspiring but also enchanting. Needless to state, the attentions span of such learners will be much longer. This has also been proved by the test conducted by the Regional Centre on Upper Primary learners using the same game components.
2. **Retention:** A higher span of attention invariably leads to higher retention. From our study on Upper Primary learners, it was understood that they retained understanding of concepts provided through games much better than the ones provided through traditional textbooks. Teaching of Social Sciences, through games, though rare, provides infinite opportunities to sustain understanding of concepts learned.
3. **Motivation:** Most of the Osteogenesis Imperfecta learners have been out of formal learning for a long period of time (often spanning more than two decades). Learning does not come to them naturally. It has to be an externally induced process with substantial opportunity cost. Needless to state, the level of Motivation in such learners would be anything but high. The teaching institution therefore, has to take the responsibility of providing motivation and sustaining it throughout the course of study. A mammoth system such as IGNOU's with three million learners cannot automatically provide mechanisms for sustained motivation. Therein lies the advantage of games. All the games mentioned above, being dynamic in nature, provide interesting features for individualized learning and progression. Since the games are based on popular folklore, the student takes an immediate affinity to them, and tries to relate the game based learning experience with the original game. The biggest motivation is to complete a game successfully, which can happen only if all the segments of a given game are successfully completed. Motivation is automatically ensured.
4. **Continuous and Comprehensive Evaluation (CCE):** CCE is the most used methodology in framing evaluation strategies the world over. The moodle presents a unique experience of integrating CCE into the LMS. While continuous evaluation is assured through a number of mechanisms such as assignments, games, evaluated discussions and so on, it becomes comprehensive due to the integration of learning modules directly with assessment. All levels of comprehension are duly factored into the assessment methodologies resulting in honing of all conceivable skills in the learner.

Challenges in Technological Adaptation

The Moodle is a novel concept in pedagogic transaction among the deprived sections of the society. Notwithstanding, the obvious advantages of the mechanism, technological adaptation of the Moodle with the pedagogic transactions of the OSTEOGENESIS IMPERFECTA learners poses certain challenges:

It may be noted that the researchers are still testing this mechanism at the ground level to arrive at an optimal mix. What is presented below is based on the preliminary inputs received by us:

1. **Choice of Devices** – The choice of devices to run the Moodle is an important element in the success of this pedagogic transaction. Not every device supports all the features of this LMS and therefore, a Government grant may be required to procure the same for Osteogenesis Imperfecta learners.

2. **Internet Connectivity and Bandwidth** – In India, at present Internet bandwidth is quite low making it unreliable the best of times. Most of the Osteogenesis Imperfecta learners stay at urban hinterlands or rural areas, making access to quality inherent services a matter of premium. This will undoubtedly affect the quality of pedagogic transaction through this LMS.
3. **Attitudinal Issues** – Attitudes play a major role in the success or failure in the adaption of any technology and this LMS is no different. Many learners are still in a time wrap and guided by traditional pedagogic structures. The Moodle needs to break such mental barriers and create a niche for itself. Even our survey, indicated a preference for traditional printed study material. Further, the teaching community is also quite reluctant to use new technological advancements under a wrongly perceived fear that a LMS could make their role redundant, little realising that technology can never replace a good teacher.
4. **Issue of Credibility** – Most policy making Institutions in India do not underscore the importance of a digital LMS. LMS is not even considered on par with traditional classroom based face-to-face pedagogic transactions. Assessment through the digital mode is frowned upon. The biggest challenge perhaps is to create a place for digital LMS in the minds of policymakers and to ensure that certification obtained through the digital mode is considered at par with any traditional degree.

Conclusions

A road less travelled, would probably define this unique study that has been a novel attempt to examine the extent of pedagogic difficulties experienced by Osteogenesis Imperfecta (OI) learners. The fact that Open and Distance Learning has not touched a significantly deserving segment of differently abled learners stands as a concern of policy makers in Higher Education in India. This is most undesirable in a democratically inclusive society such as India which abides by equality and opportunity.

The Learner Management System developed using Moodle is an easily accessible technological solution to reach out even to the most challenged learners such as the OI learners. Thus, it extends to capture and realise the true spirit of Open Learning, beyond the barriers of time and distance, which is a key element in transforming ODL to OL. Much needs to be done towards institutionalising mechanisms in Open and Distance Learning Institutions that serve as an adjunct to the existing ODL framework, so as to be inclusive to the needs of such special learners. This research study is a humble effort towards extending equitable opportunities for lifelong learning even to the most challenged learner. The research study would prove meaningful even if small initiatives are undertaken in ODL towards empowering the OI learners by optimally leveraging the power of technology to address their pedagogic needs. The special learners need special treatment through special technologies to transform itself into OL.

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EXPLORING THE PATTERN OF MIST STUDENT'S PARTICIPATION IN MYVLE FORUM AT OPEN UNIVERSITY MALAYSIA (OUM)

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Abstract

The Open University of Sri Lanka (OUSL) is one of the pioneer institutions in the world offering engineering. The purpose of this study was to investigate the pattern of MIST learners' participation in MyVLE forum at Open University Malaysia (OUM). This study also explored the level of frequencies and issues facing the learners. In the current study, we proposed whether student participation behaviours may be considered as mediating factors for learners' achievements. A quantitative study was used in this research. The sample of the participants in this study approximately consisted of 39 learners enrolled at Master Level in Islamic Studies. Evidently, the findings indicated that 46% of respondents were actively participated in MyVLE forum especially in social networking and reacted on interesting issues, 69% of students were inactive in the MyVLE forum while 92% mentioned the time constraint were the major factors of MyVLE forum participation. As this study showed, student's participation in MyVLE forum was not a significant factor that directly related to students achievement. Ultimately, this article were meant to highlight several recommendations will enhance our understanding of learners needs and will lead to solid implications for OUM educational policy and practices.

Introduction

Lifelong learning (LLL) is one of the main pillars in upholding citizens toward becoming the dynamic and innovative k-workers. Therefore, it is very important because LLL complements to progress and civilization of a country. In addition, the existence of Open University Malaysia (OUM) can provide the opportunities for greater access, open and flexible for Malaysians. The establishment of OUM is in accordance with the policy government of Malaysia that is to provide quality education delivered through open and distance learning. "The Malaysian Government, in our Third Outline Perspective Plan ... recognized the importance of Lifelong Learning. Lifelong learning will and is becoming increasingly important in the knowledge-based economy where knowledge and skills need to be continuously updated and upgraded" (Abdullah Badawi, 2002). Therefore, OUM has responded to the government's challenge by offering Islamic studies programme at the master's level (MIST) to the mass society to pursue religious courses at the tertiary level. The mode of learning system in OUM has been shaped by a combination of three key elements, namely, face-to-face seminars, online learning and additional learning resources such as, module i-lecturer, i-feed, i-tune and so on. Consequently, it should be the commitment and the responsibility of the students to work independently to succeed in their study by the various modes of studying provided to them.

Students that pursuing in Master of Islamic Studies was not spared in the continuity of life to learning had to rely on MyVLE on because participation in the platform has provided many benefits to learning to the students. Thus, the focus of this study is to look at the pattern of student participation in the MyVLE forum for MIST. The study only focused on the experience of the MIST students at the Open University Malaysia to explain some issues and problems as well to find solutions.

Pattern can be defined as the way in which something moves or develops. Hence, from this definition, we can conclude that it is a form of the style of students' participation in the MyVLE forum in learning. The pattern of participation of students in MyVLE forum is very closely related to the factors of time and priority focused on a student OUM. Besides, it is also associated to excellent, mediocre and poor achievement factor of OUM students. This study is only a part of a more comprehensive study.

Study Objectives

This study aimed to identify the pattern and shape of MIST students' participation in the MyVLE forum. It is also to find out the frequency of participation of MIST students in the forum. In addition it aims to find out MIST students' problems in their participation.

Problem Statement

To achieve the objective of the study above, a number of questions have been formed namely:

- What forms of student participation in the MIST MyVLE forum?
- What is the frequency of participation of students in the forum MyVLE?
- What is the main problem in the participation of students in the forum MyVLE?

Literature Review

Patterns of participation of students in an online forum focused on queries about the questions that is not understood, shared opinions, reacted and recommendations against questions or opinions from friends and tutors (Erman Yukselturk, 2010).

Naranjo et al., (2012) in his study found out that not many students who participate in online forums. However, it is not a measure of the quality of student learning. This was agreed upon by Davies & Graff (2005) found that online interactions that often does not lead to higher performance for students achieving high scores. However, students who fail the course is those who rarely interact online.

Online forums also have their own, among them the lack of trouble is the participation of students (Wing Lam, 2004). It should not weaken the spirit e-tutoring or e-facilitator and other students because of the online discussion forum has been able to upgrade their skills and research skills for lifelong learning (J. Jahnke, 2010), intellectual support and knowledge sharing (Erman Yukselturk, 2010).

Several factors influence students to in in an online forum. Use of the Internet plays a significant role. This includes facilities and speed of internet access. Moreover, many student workload such as individual and group assignments, constraints of time, power failure (Tella & Isah, 2011) sometimes hindered them from participated actively in the forum. However, it can be overcome with the provision of or the form of an attractive and systematic forum that could entice students to participate in the forum (Erman Yukselturk, 2010).

In fact, the successful implementation of e-forum required several elements such as (i) lecturers need to be trained and monitored on their participation in the e-forum; they should also learn how to elicit more participation from students. This would be a critical requirement whether or not e-learning was used but perhaps is even more important since classroom face time will fall; (ii) classroom contact time should be flexible; the presence of an e-forum should not uncritically entail a substantial fall in face-to-face facilitation and; (iii) Lecturers need to enforce the requirements outlined in the rubric and take the lead to repetitious combat answers, plagiarism, non-participation and the atmosphere of monotony. In other words, the lecturer is often a critical figure in creating and sustaining interest in the forum. (Alwyn Lau & Oo Cheng Keat, 2014)

Methodology

The data for this study were obtained using a modified questionnaire instruments of Tella and Isah (2011). It contains six sections, namely, the respondent's demographic, frequency of participation, participation patterns, benefits, effects and problems in the MyVLE forum participation. The questionnaire was distributed to all students of the master in Islamic studies through email. Due to time constraints, only 39 students who replied have been selected for this study. All data collected is analysed and processed descriptively using Statistical Software Packages for Social Science (SPSS) Version 20.

Findings and Discussion

(a) *Student Demographic*

Table 1: Student Demographic

Item	Subject	No	Percentage (%)
Gender	Male	27	69
	Female	12	31
Age	21-30	6	15
	31-40	20	51
	41-50	10	26
	51-60	3	8
Year of Enrolment	2011	2	5
	2012	5	13
	2013	5	13
	2014	27	69
Learning Centre	Klang Valley	2	5
	Northern Region	5	13
	Eastern Region	16	41
	Southern Region	11	28
	Sabah and Sarawak Region	5	13

Table 1 shows the student demographic. There are 27 or 69% of male students and 12 or 31% female students participate in this study. Students ages frequently respond 31-40 years (51%), followed by 41-50 years (26%), 21-30 (15%) and 51-60 years (8%). The enrolment by the year 2014 depicts the most populous students' involvement in the MYVLE forum that represents 69% (27) of the 39 students. In contrast, 13% or 5 students from the 2012 and 2013 enrolment had participated in the MyVLE forum. Student enrolment in the year of 2011 represents the lowest number of participation in the MyVLE participations that represents a mere 5%. The students from the Eastern Region which consists of the state of Pahang, Terengganu, and Kelantan have the most numbers of students participating in the MyVLE forum which is stand of 41% or 16 students, followed by the Southern Region (28%), Northern region of Sabah, Sarawak (13%) and lastly the students from the Klang Valley (5%).

(b) ***Frequency of Participation***

Table 2: Frequency of Participation

Frequency	No.	Percentage (%)
Every day	2	5
Evert week	5	13
Every two weeks	5	13
Every month	6	15
Once in each semester	7	18
Not at all	14	36

Based on Table 2 above, a total of 14 students (36%), i.e. a majority of them does not participate in the forum. Seven (18%) students only participate once during each semester, 6 (15%) participate on a monthly basis, 5 (13%) students participate in either every week or every two weeks, while only two (5%) of students who join each day. Thus, there is no different with the findings obtained by previous studies among others by Wing Lam (2004) and Naranjo et al., (2012).

(c) ***Student Participation Pattern***

Table 3: Student Participation Pattern

Item	No.	Percentage (%)
Socratic questioning (ask questions about something that is not clear)	3	8
Share your personal opinion/experience	5	13
Give a reaction (response issues or enquiries by other partners)	18	46
Indecent suggestions (issuing opinions together in a matter with the proposed solution)	10	26

As presented in the above table, almost half of the total amount, of students that participate in this study, preferably to give reaction to issues and queries from other partners. It is followed by 26% or ten students that keen in issuing an opinion on an issue in the MyVLE forum. There are five students are more comfortable to share their personal opinion on the MyVLE forum. Lastly, only three students or 8% of students tends to ask questions about something that is not clear in the MyVLE forum.

(d) **Problem in Participation****Table 4:** Problem in Participation

Problem	Yes / No	No	Percentage (%)
Time factor	Yes	36	92
	No	3	8
Interruption of power supply (including electrical)	Yes	16	41
	No	23	59
The internet and computer access limited	Yes	27	69
	No	12	31
The cost of access	Yes	20	51
	No	19	49
Slow/Weak connectivity	Yes	30	77
	No	9	23
Knowledge and skills are not sufficient to use a computer or the internet	Yes	12	31
	No	27	69

There are three main factors of the students did not participate in the forum. The provided table above shows that a huge numbers of students which represent 92% or 36 students cite time constraints as the main factors that they are not active in the MyVLE forum. It is in line with studies done by Salleh et al., (2004), which shows the time management is the main problem the bulk of student OUM. Next, there are 77% or 30 students agree that the slow and weak connectivity has created a problem for them to participate in the MyVLE forum. It is followed by a factor of the cost of accessing the internet, which representing 49% or 20 students. Other problems faced by the students is electric disturbances that are 41% or 16 students). Lastly, the study shows that the majority of students (69%) has no problems with computer knowledge and skills. It is undeniable that Salleh et al. did the study, (2004), which shows the time management is the main problem with the bulk of student OUM.

Related to time, this study is in line with studies done by Salleh et al., (2004), which shows the time management is the main problem with the bulk of student OUM.

Conclusions

In conclusion, MyVLE is a tool for knowledge-based sharing to enhance and improve the learning objectives in the globalisation era. This study showed students are still less engaging to "action" online which has been provided by them. Although they agree that MyVLE forum is a very helpful in learning yet due to some constraints, especially the time factors that could not be fully utilised. While in the form of participation, the majority of them more focused on giving reaction to an issue or inquiry by other forums.

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INTEGRATED LABORATORY EXPERIMENT SETUP TO EMPOWER THE ENGINEERING EDUCATION IN DISTANCE MODE

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Abstract

The Open University of Sri Lanka (OUSL) is one of the pioneer institutions in the world offering engineering degrees in distance mode since mid-1980. In the past few years, number of students registered for engineering courses has increased and the university encountered difficulties when delivering face-to-face laboratory (FFL) experiments with limited resources. Conversely, majority of the students study while being employed and find it difficult to attend FFL experiments. Due to lack of fully equipped laboratories in regional centres across the country, most laboratory experiments are conducted on weekdays in the central campus. Thus, working students need to take continuous leave from their work places, to visit the central campus. Past studies indicate physical distance to central campus and workplace commitments influence student dropout from the OUSL. Engineering laboratory experiments can be classified as experiments which are performed with the intention of inculcate theory, and secondly, to provide hands-on experience in handling equipment and components. This paper introduces an integrated laboratory experiment setup including both types of experiments to achieve objectives while overcoming problems encountered in open distance learning (ODL). This blended setup integrates with face-to-face laboratory, remote laboratory, and multimedia demonstrations, and help to reduce current FFL duration by 50%. The first phase of the integrated laboratory setup provides an opportunity to conduct all relevant experiments by multimedia demonstrations via the internet. This prior preparation helps to understand the linkage between the theory and the experiment. Thereafter the students can attend the first FFL session, which covers about 25% of the hands-on laboratory experiments. As the next step, 50% of the experiments are offered using a remote laboratory, which facilitate conducting experiments remotely through internet while interacting with real equipment and making actual observations. The second FFL session (Fourth phase of the system) is used to accomplish rest of the experiments (25%). This session will facilitate clarifying any problem that may occur in remote laboratory sessions. This blended laboratory system will help to achieve ODL objectives while utilizing resources productively and cost effectively. Having implemented the idea and based on the information received from concerned stakeholders, this has proved to be an ideal solution to the difficulties faced by students in distance education.

Key words: Integrated laboratory experiments, online remote laboratory, open distance learning

Introduction

Distance learning education has its origins in the 18th century. In 1728, a teacher named Caleb Philipps offered shorthand courses as weekly mailed lessons (Holmberg, Bernath & Busch, 2005) and in 1840, Sir Isaac Pitman delivered shorthand courses by mail (Kolesinski, Nelson-Weaver & Diamond, 2014). The University of London, established in 1858, is the first university in the world to offer distance-learning degrees through its External System (Tait, 2003). The United Kingdom's Open University established in 1969, is the first Open University in the world (Matthews, 1999). The Open University of Sri Lanka (OUSL) was established in 1980 with same legal and academic status as other national universities in Sri Lanka.

Distance Education is a mode of teaching and learning, characterized by separation of teacher and learner in time and/or place for greater part of the educational transaction. This is mediated by technology for delivering learning content with the possibility of face-to-face interaction for learner-teacher and learner-learner interaction, provision of two-way didactic communication, and acceptance of industrial process for division of labour, and economies of scale (The Commonwealth of Learning, 2015).

Open and Distance Learning (ODL) refers to the 'provision of flexible educational opportunities in terms of access and multiple modes of knowledge acquisition'. Flexible means the availability of choices for educational endeavours anywhere, anytime, and anyhow. Access means opportunity made available to all, freeing them from constraints of time and place. Multiple modes mean the use of various delivery systems and learning resources (The Malaysian Qualifications Agency, 2011). Additionally, ODL fulfils the fundamental right to learn and helps human capital development of a country and the world.

Apart from open universities, distance education was practised by many other conventional universities of the world and at present, distance education in combination with conventional education is used as a dual mode education to fulfil the learner requirements. The Faculty of Engineering Technology of OUSL is one of the pioneering faculties to offer hard engineering programmes through distance mode in the world (Liyanagama, 2014).

Laboratory class is a main and essential component of engineering education. The three basic types of engineering laboratories are development, research, and educational. Practicing engineers attend development laboratories while research laboratories are used to seek broader knowledge that can be generalized and systematized. Alternatively, diploma and undergraduate students attend instructional laboratory to acquire knowledge, already possessed by practicing engineers (Feisel & Rosa, 2005).

Problem

According to ODL definition, the idea of OUSL was not merely to cater adult education, but a concept that embodies the belief that learning is a constant process and all individuals have a right to learning opportunities (Reggie, 2015). Still, problems exist when providing lifelong education for all.

One primary aim of the OUSL is to provide educational opportunities to employed people. In 2014, over 60% of students were not employed when they enrolled in the engineering degree programme. The total number of students who dropped out from the OUSL engineering degree programme during 2012/13 academic year was 1258. Among dropouts, 50% were employed and one major reason for the employed students to record a high dropout rate is their workplace commitments. Another reason was the lack of facilities, especially laboratory facilities for outstation students, whose dropout rates were 20% higher than those lived in the vicinity of Colombo, where central campus is located (Liyanagama, 2014). Ismail (1997) also mentioned that, variables related to distance from home to the institution were influential on students drop out from the Open University of Sri Lanka.

According to Vidanapathirana (2010), approximately 53% of the OUSL's admissions are restricted to Western Province, which shares only one third of country's population. If one removes the 'language', 'management', and 'education' programmes, this will escalate up to 75%.

Fozdar, Kumar, and Kannan (2006) found that, the cost associated with attending laboratory courses was the second highest personal reason (38.24%) for withdrawal the Bachelor of Science programme of Indira Gandhi National Open University in India. They identified nine main reasons for dropping out of students, among which, 52.94% mentioned that distance was their main

difficulty in attending laboratory sessions. It indicates other ODL universities also face similar problems as OUSL.

According to OUSL statistics, student enrollment of the Western Province in 2013 /2014 academic year is 49.9% of the total students, as presented in Figure 1 and 2, while population of the Western Province represent 28.7% of the country population. Also, 46.3% of the total students are registered in the Colombo Centre (Central Campus) as illustrated in Figure 3, although OUSL operates 26 regional and study centres around the country as shown in Figure 4 (Public Information Division of the OUSL, 2013).

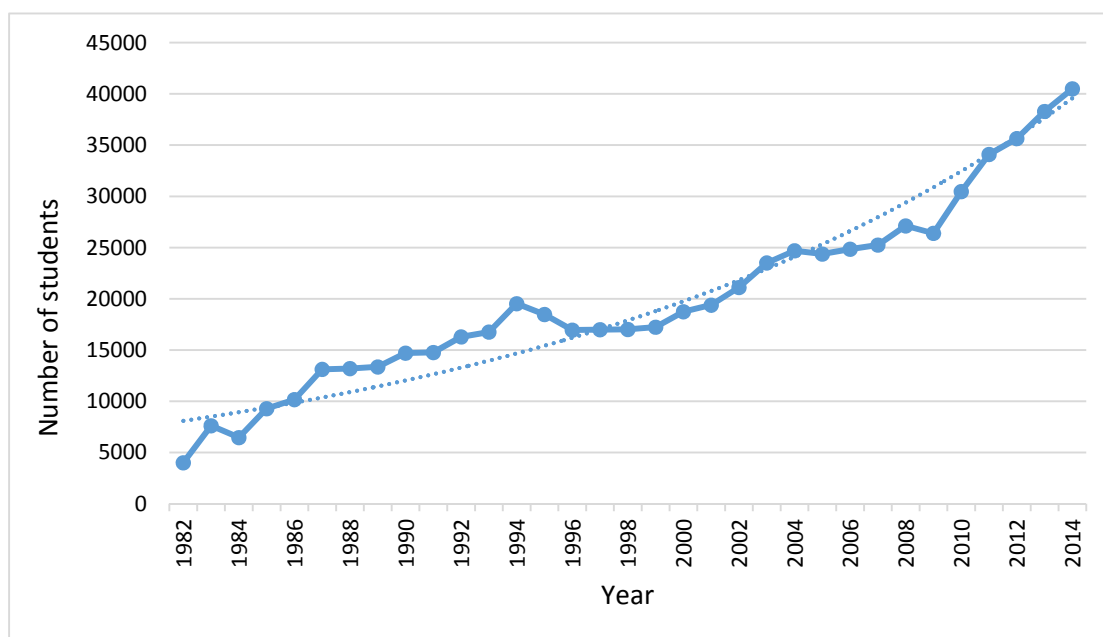


Figure 1: Student enrollment of the OUSL

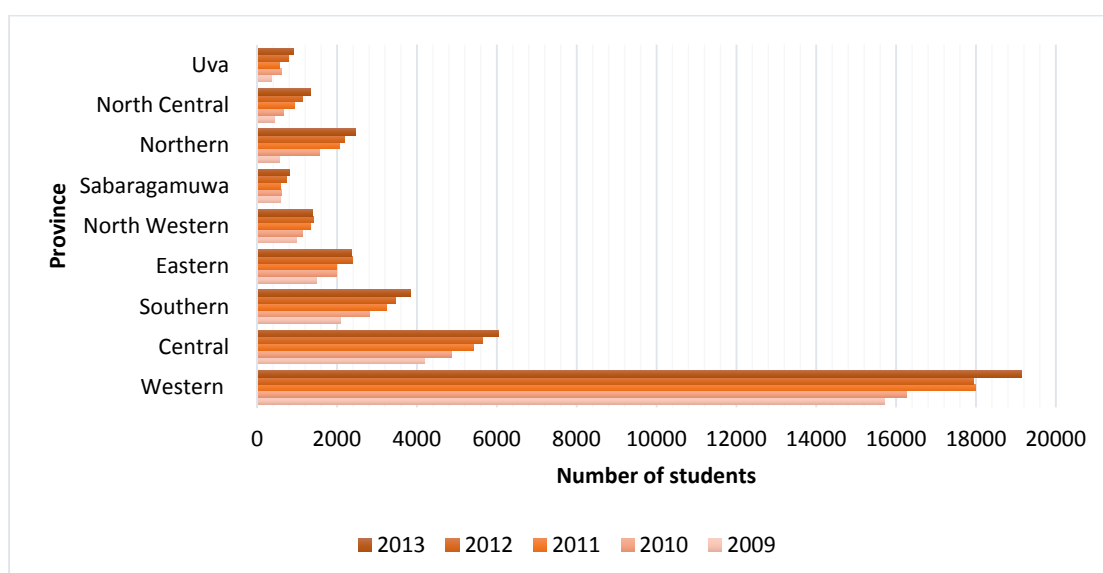


Figure 2: Student enrollment of the OUSL by province

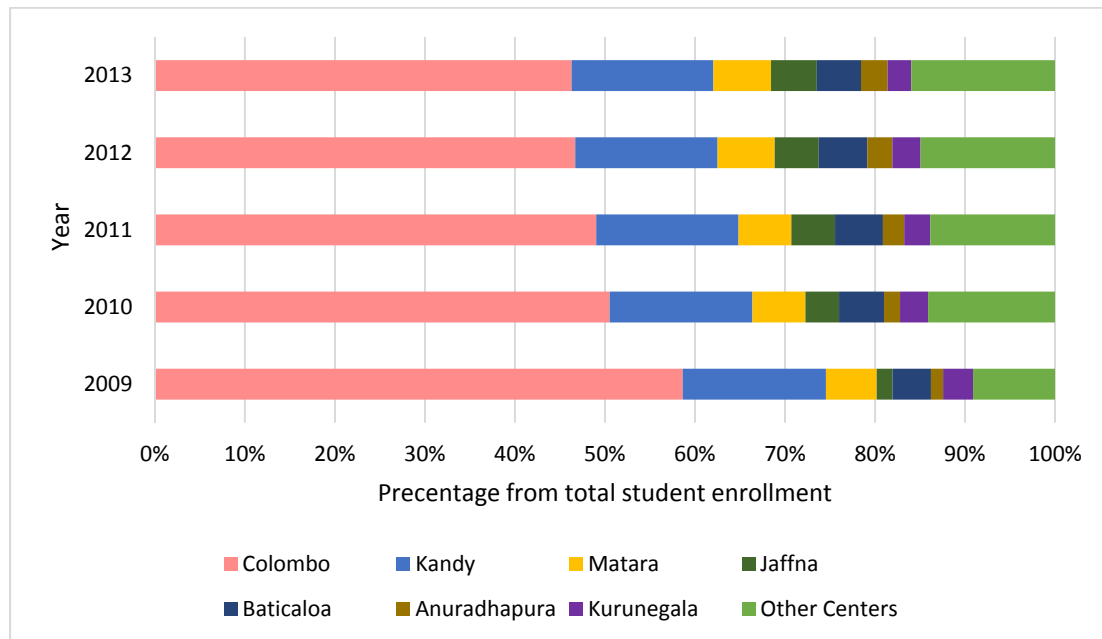


Figure 3: Student enrollment in key centres

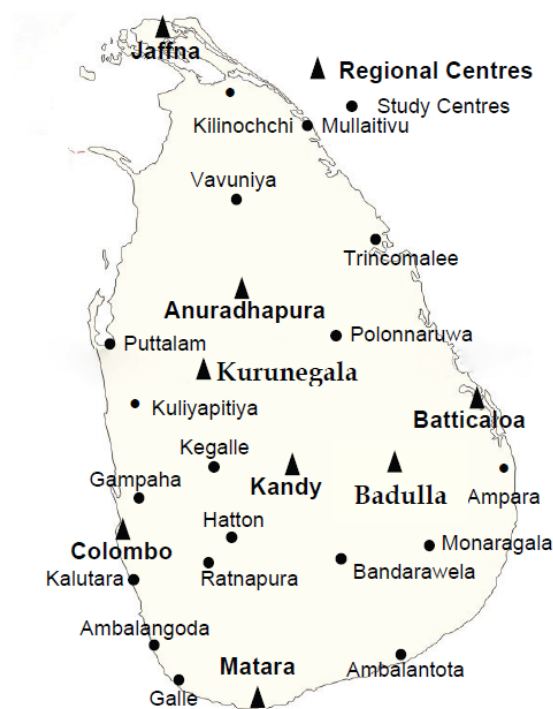


Figure 4: Regional and study centres of the OUSL

Major educational methods/components used by the OUSL to deliver engineering education in ODL mode are printed course materials, Moodle, virtual classes, tutor marked assignments, continuous assessment tests, day schools, and final examinations. Continuous assessment tests and final examinations are held at regional centres around the country. Generally, day schools (face-to-face class) are conducted at Central Campus in Colombo and if a certain number of students have registered for a particular subject in a regional centre, the day school is held at the regional centre. However, most laboratory experiments are available only at the Central Campus in Colombo due to lack of resources in many regional centres. As illustrated in Figure 1, number of students of the OUSL increases daily in an exponential growth and the university face difficulties with expanding resources.

According to Hill (2009), work-related challenges are the most prominent difficulty among various hardships identified by OUSL learners. Similarly, Hill indicated that, “Learners who work may have difficulty completing course work, and may be unable to attend practical and examinations.”

Methodology

ODL institutes face new challenges while delivering laboratory classes in engineering and science programmes. An online remote laboratory (ORL) system was developed in the OUSL as a solution (Nandana, de Mel & Priyankara, 2015). It allows students to conduct practical exercises with real equipment, without being physically present in a conventional laboratory. Remote laboratories provide opportunities to students to perform more practice/additional experiments to help reinforce concepts and provide further understanding (Lindsay, Liu, Murray & Lowe, 2007). However, it is not possible to replace all practical sessions by remote laboratories due to the need of hands-on experience, and the difficulty of implementing certain experiments using remote laboratories.

If traditional FFL is totally replaced by ORL, there is no opportunity to work with real laboratory equipment. In addition, it is difficult to clarify problems encountered while performing the remote laboratory. Therefore, an Integrated Laboratory Experiments System (ILES) is proposed by integrating FFL and ORL with additionally introducing video demonstrations of the experiments. Workflow of the system is illustrated in Figure 5 as below:

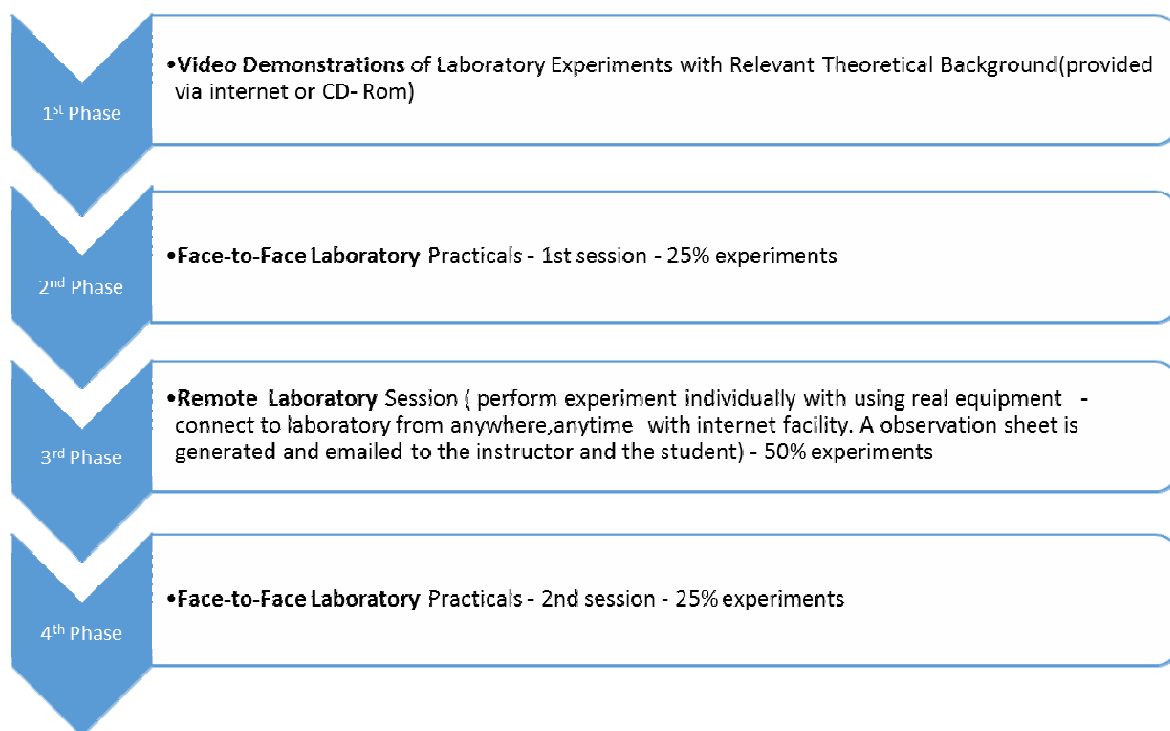


Figure 5: Workflow of the Integrated Laboratory Experiments System

As presented in Figure 5, this laboratory system is broadly divided in to four phases. However, when needed, the number of stages can be increased by splitting the four phases.

First phase of the laboratory work is a video demonstration of the relevant experiment/s and, it will provide necessary theoretical background of the experiment while demonstrating required steps of the experiment. However, to ensure that students learn the process accurately by themselves, some steps in results and calculations will be purposely omitted (with notifications if necessary) in demonstrations. Learners have access to video demonstrations throughout the study programme

from the beginning and the demonstration package will be distributed over the internet and/or as a CD-ROM.

After following video demonstrations, student will be able to perform laboratory practical work. The single laboratory session currently available is divided into three sessions as FFL-stage I, ORL, and FFL-stage II.

The FFL-stage I is the second phase of the ILES. It offers around 25% of the experiment to students. At this stage, the students gain necessary basic knowledge and hand-on experience by familiarizing with the instrument.

The ORL session is introduced as the third phase of the ILES, which will cover around 50% of the experiment. Students have access to pre-configured laboratory setup (real equipment and components) available in the university laboratory, via the ORL system. A user interface of the ORL client application is presented in Figure 6.

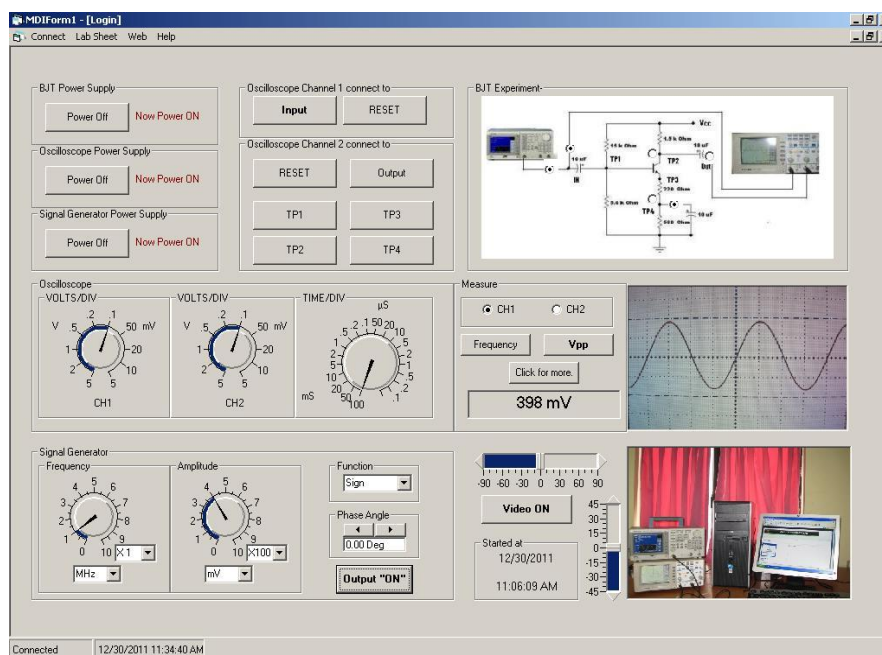


Figure 6: User interface of the ORL client application

Again, fourth phase provide the FFL-stage II. If a student faces any difficulty while performing the experiment remotely in ORL session, and is unable to rectify, there is an opportunity to solve it. In addition, rest of the experiment can completeduring this session.

This system provides progressive knowledge to students and thereby enhances the current teaching-learning process of the laboratory experiment.

In the traditional laboratory delivering, always there is an occasion to faceFFL before covering theoretical concepts of the subject. It is an unavoidable problem faced by almost all universities, considering the time/space, and resources management. Then, knowledge transmission to all students will not happen properly.

Introducing video demonstration in this system will partially overcome this problem with relevant theoretical background, preceding to FFL sessions. In addition, there is an opportunity to attend a FFL session (stage II) again, in latter part of the semester/academic year, after completion of a considerable portion of theory.

The ORL session offer experiments specially related to understanding theoretical concepts; rather gain hands-on experiences. Therefore, proper selection of experiments for ORL and FFL is necessary. However, students have an opportunity to explicate any problems occurred in the ORL session at the FFL-stage II, by physically interacting with real equipment.

The Survey

The survey was conducted focussing on the requirement of such a system for students to overcome problems currently associated with ODL laboratory classes of the OUSL, and collecting their viewpoints regarding ILES.

An online survey tool developed using a Google form was administered among 270 undergraduates of the Department of Mechanical Engineering, OUSL. This sample was selected from the students who already completed laboratory class, at least in one subject, in mechanical and mechatronics field. Study findings are based on 168 filled-in responses received.

Results and Discussion

Replace Current FFL System by ILES

According to the survey responses, 62.5% students were happy to replace current system by the new system, while 21.4 % students have no idea regarding this matter, hence were not aware about the ILES. Only 16% students indicated their disapproval at replacing the current FFL system with the ILES. However, all those 16 % of students were unemployed and their hometown located within 20km to the Central Campus. Thus, it is evident, that distance from home to central campus is a major factor, when including face-to-face components in a distance education system.

View of Employed Students

Majority of employed students (95.9%) like to work with this system than traditional FFL except three students who indicated that they could make a decision after some experience with the proposed system (ILES).

Five students commented if laboratory sessions were held on weekends, it might be helpful for employed students and will overcome problems they encountered. Adopting it at OUSL setup is problematic due to lack of adequate time slots and human resources available during weekends, to include all laboratory sessions. Other face-to-face sessions, such as day schools and examinations have already occupy weekends.

According to responses, all employed students (74 in number) face difficulties when obtaining consecutive leave to attend laboratory sessions (difficulty level: less = 12.16%, moderate = 66.22%, high = 21.62 %).

Split the Single Laboratory Session

Splitting single laboratory session into two or more sessions was favoured by 67.86% students. A student commented that,

“It is better if consecutive lab sessions are limited to maximum two days. If more days are needed, sessions should be conducted after one month, so the number of leave obtained in a certain single month is reduced.”

Similar idea was proposed by 32% of the students. The present ILES system itself supports this requirement.

Overcome Other Problems by ILES

One objective of FFL is to receive hands-on experience. However, 14 students remarked that, “Most of the time, practical was not actually performed by themselves,” and the reason being, “Number of student in a group is high”. Some indicated that, “Time allocation for the practical is not sufficient”. The ILES provide facilities to perform experiments individually and thus this problem could be partially solved.

Infrastructure Facilities for ILES

Almost all students remarked that they have access to a personal computer and internet in different ways. Some students (7.14%), who do not have access to computer and/or internet facility at home were able to access the ORL through National Online Distance Education Service Access Centres (NACs), regional/study centres, or internet cafés. Regional/study centres of the OUSL and NACs are presented in Figures 4 and 7 respectively. Therefore, sufficient infrastructure facilities are available for students to access the ORL of ILES.

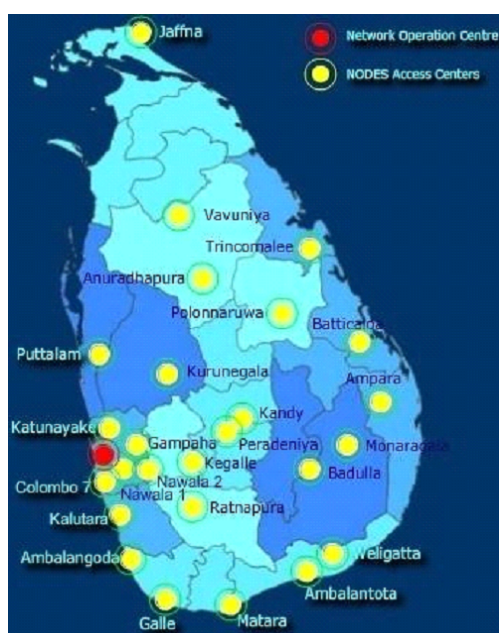


Figure 7: National online distance education service access centres

Conclusions

According to the survey results, it is evident that, employment and distance from their residences to central campus are the major challenges faced by students with the inclusion of face-to-face components in a distance education system. The IELS helps to overcome such challenges, when delivering laboratory classes.

Since the number of students of the OUSL is exponentially growing daily and resources are limited, this laboratory-delivering model is a good solution to manage limited laboratory resources effectively. Almost all employed students face difficulties to obtain consecutive leave to attend laboratory sessions. The IELS solve this problem by reducing FFL sessions up to 50% and dividing single FFL session into two or more sessions.

The video demonstrations (first phase of ILES) is helpful to properly understand laboratory experiments and the ORL (third phase of ILES) provide facilities to perform experiments individually and remotely. It also permit repeating the experiment if they need more experience.

Therefore, ILES enhance the effectiveness of the learning process of laboratory classes while achieving ODL objectives.

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VIRTUAL CLASSROOM FOR TECHNOLOGY-ENHANCED TEACHING AND LEARNING

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Abstract

Teleconferencing in online learning offers a variety of educational opportunities. It allows student-centered learning where varieties of online tools can depict on individual learning styles and help students become more versatile learners. It also encourages collaborative learning where online group work allows students to become more active participants in the learning process. However, teleconferencing technologies are not standardized, which had caused various issues related to interoperability, transparency, platform dependence, security and cost. As such, data or application sharing, virtual room, mobile usage, shared whiteboard, virtual hand raising, online slide shows and joint viewing of presentations are varied across the adoption software. This study aims to propose a Wawasan Open University (WOU) virtual classroom to diversify and increase the capacity and technology of the university, especially in hosting an in-house teleconferencing platform. WOU virtual classroom has been successfully implemented in a testing platform. It allows in-house teacher, i.e. tutor and course coordinator of WOU, accessing for distance learning activities. This study suggests an extra assessment for the highlighted issue watching without learning. The proposed model benefits the peer interactions between the teacher and students. On the other hand, it allows real-time assessments by teacher during the online course delivering. Adapting and changing of course content in the virtual classroom for learners are dynamic according to the real-time assessment by teacher. The proposed model is an expansion of WOU existing operational model. A web-browsing-based virtual class is proposed by adopting various open source software which involve no proprietary recurring cost but minimal initial deployment cost. Content delivering is not limited to face-to-face tutorial support at a limited geographical coverage location at the regional centres and learning centres. The implementation of this virtual classroom may attract teachers or learners aboard. It expands the distance learning recruitment to a border-less mode, either in live or recorded video-audio environment. Learners are allowed to replay the recorded virtual classroom after the scheduled date and time for all enrolled courses. The implementation detail and issues will be discussed further in the paper.

Introduction

Building distance-learning based on classic pedagogy, by observing 'massive' classes for hundred students or more and realizing it on the web, is a challenge in designing courses. Indeed, a distance-learning university realizes many courses for learners, accepts open entry, and leads the move into online methods of teaching and learning. In this respect, the numbers of views and downloads of the course materials do not mean learners have engaged for enrolled courses (McAndrew & Scanlon, 2013). The emerging of Massive Open Online Courses (MOOCs) is reducing the direct contact between teacher and learner after the changing of inter-activity. Course presentation, either using video or broadcasting, is an adjunct and it is not the core content as reported in this effort (McAndrew & Scanlon, 2013).

The issue of 'clicking or learning?' has been highlighted, and finding from big data sets only possess few implications for teaching and learning via MOOC (Reich, 2015). Trajectory of student engagement to their learning is identified as an important factor for rebooting the MOOC research in previous work. Following the increasing interests of Wawasan Open University (WOU), i.e. a distance-learning university, in delivering the online courses and programmes, this study is conducted as a complement to the MOOC research. A set of web-browsing technologies is adopted to create a virtual classroom for meeting up remote participation, including teachers and learners. It aims to visualize the engagement of students in their learning. The literature review on related works is presented in Section II. In Section III, the details of our proposed model with implementation are presented. Our finding and discussion are reported in Section IV. Conclusion and suggestion for further work are presented in Section V.

Literature Review

In early work (Martn-Blas & Serrano-Fernndez, 2009), an open source course management system, i.e. Moodle, is adopted as a teaching tool in Physic. It was used as an enhancement to the face-to-face courses, which created an online learning environment for knowledge sharing and supervised activities. The online physic course helped students in reinforcing their abilities and knowledge as reported in (Martn-Blas & Serrano-Fernndez, 2009). In another work (Jia et al., 2012), Moodle was customized in evaluating the students' performance. Moodle 1, which known as a web-based system, was used to host the vocabulary acquisition and assessment system for the Grade Three students in a junior middle school. In (Jia et al., 2012), the blended learning environments with Moodle has resulted a better students' performance than the control class. A combination of electronic-learning and face-to-face class was conducted for the subject microeconomics in study (Novo-Corti et al., 2013). The assessment with multiple choice tests through Moodle was implemented for the double degree in Law and in Business Administration and Management. The proposed method promotes the participation of students, increases their motivation, and improves their competence as well as their performance in terms of qualifications (Novo-Corti et al., 2013).

In the recent study (Caputi & Garrido, 2015), electronic-learning contents with Moodle are studied under the manner of student-oriented planning. The content for learners is personalized according to students' background and learning objectives. Artificial Intelligence is adopted as a tool for mapping actions of pre-conditions and causal-effects to find plans that best fit the needs of each student. Flexibility of course-design is the claimed advantage of the proposed model (Caputi & Garrido, 2015). The proposed models offer the flexibility to adapt any type of education content for a wide mixture of students. The identified challenge of this work is the strong collaborations of teachers, students and the correct definition of complete courses in Moodle.

In another context, teleconferencing is identified as an important tool to enable remote participation for worldwide organizations. Apache OpenMeetings 2 is an open source software, which offers video-conference through web-browsing. It requires no software installation at user site, and provides easy integration with existing tools and customization of requirements. In (Santos et al., 2011), Apache OpenMeetings is adopted as a video-conference software for collaborating worldwide laboratories. It is integrated with the authentication and authorization mechanisms of European Fusion Development Agreement (EFDA), which is a multi-organization security infrastructure with a set of secure resources. Apache OpenMeetings offers good quality of service and aids cooperative developments, which is based on a distributed security technology, for its members in accessing the EFDA federation resources (Santos et al., 2011).

In recent work (Pereira et al., 2014), Apache OpenMeetings is adopted to create video, which records oral presentations pertaining different techniques of diagnosis in medical imaging. The work reported that recorded video clips prove to be a better didactic method to develop both cross-curricular competencies and curricular specific competencies than traditional methodologies in nursing studies (Pereira et al., 2014).

In virtual classroom, the interactivity of peers, i.e. teacher and learners, takes place both in video-audio format and in written format. Teachers and learners can share applications, files and documents and give presentations in a virtual classroom (Christova & Mihai, 2011). In work (Kruger-Ross & Waters, 2013), the situational theory of publics is studied in the environment of virtual classroom has demonstrated the success of online learning. The work demonstrated the learners' ability in identifying a situation that can help removing obstacles will lead to greater anticipation in that situation. The finding of work helps teachers in increasing awareness and involvement in the course. Besides, it also helps reducing restriction in participation (Kruger-Ross & Waters, 2013). In another work (Mihai, 2014), a study of webinar series is conducted on teaching European studies in Brussels. It aims is to fill up the gap of using technology-enhanced learning in social sciences via the implementation of virtual classroom.

There are a variety of research works using virtual classroom in serving different domains recently. A computer-based training with virtual classroom for Ebola preparedness is conducted at a hospital in Sierra Leone (Sansom, 2015). The significant of the proposed method offers cost-effective, high-fidelity training in infection control, which in the absence of a reliable vaccine, particularly front-line health workers. In another work (Dahlberg & Bagga-Gupta, 2014), an empirical study of language and transmute positions is conducted using the virtual classroom in understanding global learning spaces. The findings are useful for support meaning-making at online environments in identifying the substitution in learning experience. In work (Milosevic et al., 2015), adopting Facebook as virtual classroom is conducted for learning and teaching among Serbian students. The research is aimed to improve communication with peers and professors, improve and expand the discussion with other students, post announcement related to lectures, exams and other events at the university. It was targeted on Facebook student-users towards in providing support in task execution, quality improvement of educational process and expansion of the total quantum of knowledge. In another work (Burnett, 2015), collaboration in virtual and face-to-face classrooms are studied in how young children engage in the process of 'being together'. The finding of work highlights five inter-linked propositions for promoting collaboration among young children. In work (Webster, 2015), a study of declarative knowledge acquisition is conducted in immersive virtual classroom. Its aim is to develop and provide a low-cost, scalable, and portable virtual reality system containing purposely designed and developed immersive virtual learning environments for the US Army. Its research results indicated that virtual reality-based learning environment can produce better performance. There was also statistically significant interaction between instruction type and time.

As such, this study proposes a virtual classroom using the open source management system, i.e. Moodle. It is designed based on existing WOU network infrastructure and university requirements. Technically, an open source teleconferencing, Apache OpenMeetings, is embedded into the Moodle for borderless mode of video-audio course contents delivering. Details of proposed model are explained in the next sections.

The Proposed WOU Virtual Classroom

A web-browsing-based virtual class is proposed by adopting various open source software, as shown in Figure 1. Two servers are used to host Moodle and Apache OpenMeetings in the implementation. The mandatory software are MySQL relational database 3 and Apache HTTPD web server 4 in both servers. However, only the Java Runtime Engine is required in the Apache OpenMeetings server. Linux is the platform for both servers, in this case, Ubuntu 5 is used. All involved software are open source, which involve no cost in implementation as stated in Table I.

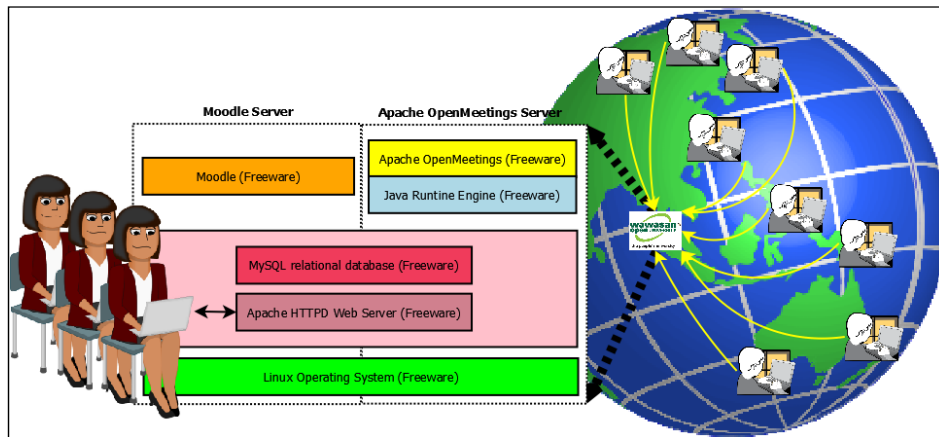


Figure 1: The network diagram of proposed virtual classroom

Table 1: The List of Open Source Software Used in the Two Servers for the Experiment

Name	Version
<i>Server for the WawasanLearn</i>	
Ubuntu server edition	14.04_02
Moodle	2.8
<i>Server for the standalone OpenMeetings</i>	
Ubuntu desktop edition	14.04_02
Apache OpenMeetings	3.0.4

WOU learners utilize web browser in accessing the virtual classroom, i.e. WawasanLearn. Figure 2 shows the details of process of accessing the WawasanLearn. The proposed virtual classroom is designed with considering the advantages of existing network infrastructure in WOU. Existing authentication server and student portal are adopted in the proposed work.

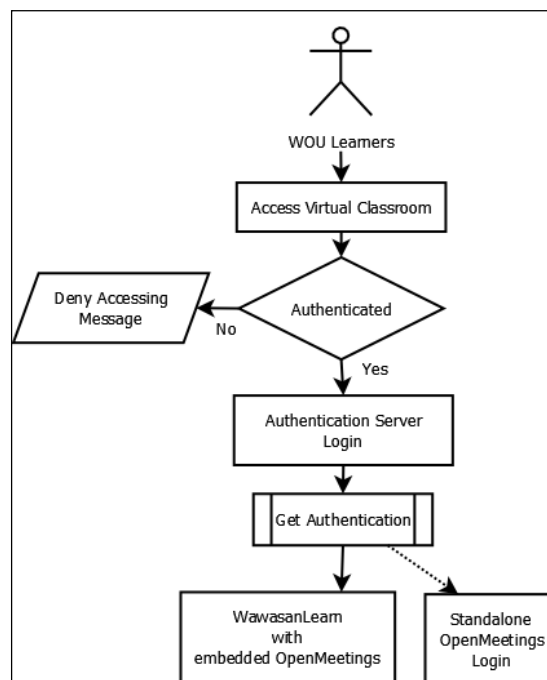


Figure 2: The process of accessing the WawasanLearn with embedded Apache OpenMeetings and its standalone version

A testing platform (as shown in Figure 3) is deployed in Ubuntu with the Moodle. A sample course is created in the testing platform. The teacher of the created course has the ability to add a virtual classroom using Apache OpenMeetings, as shown in Figure 4. Figure 5 shows the details of a virtual classroom to be created by the teacher.

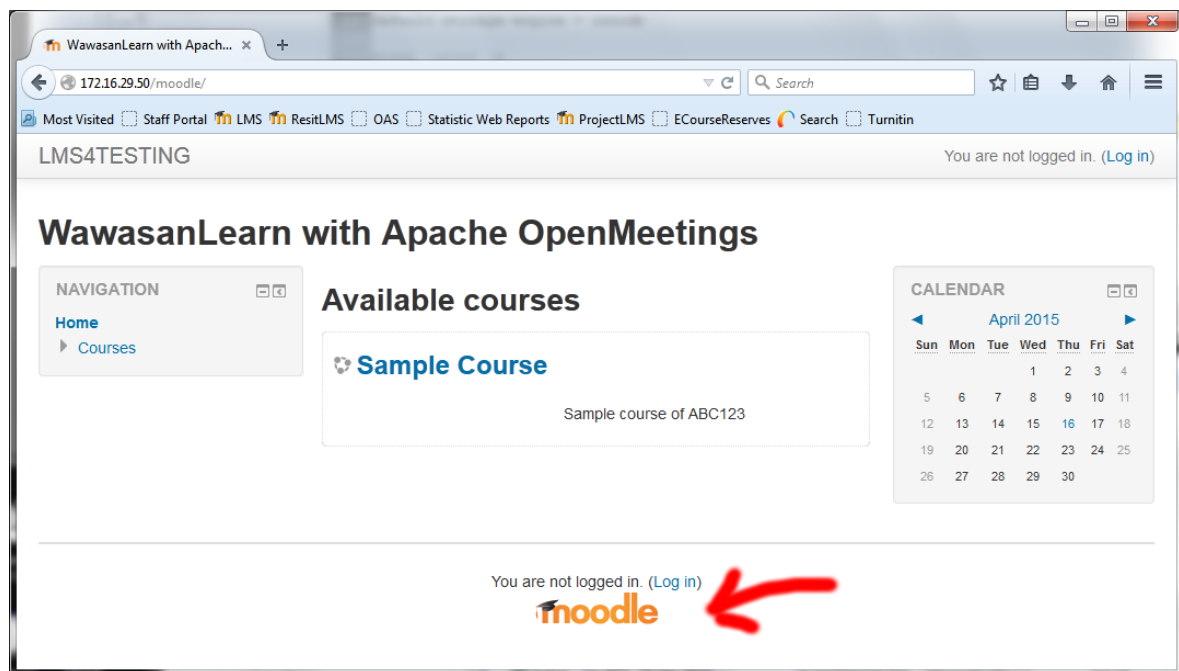


Figure 3: WawasanLearn: A testing platform of virtual classroom

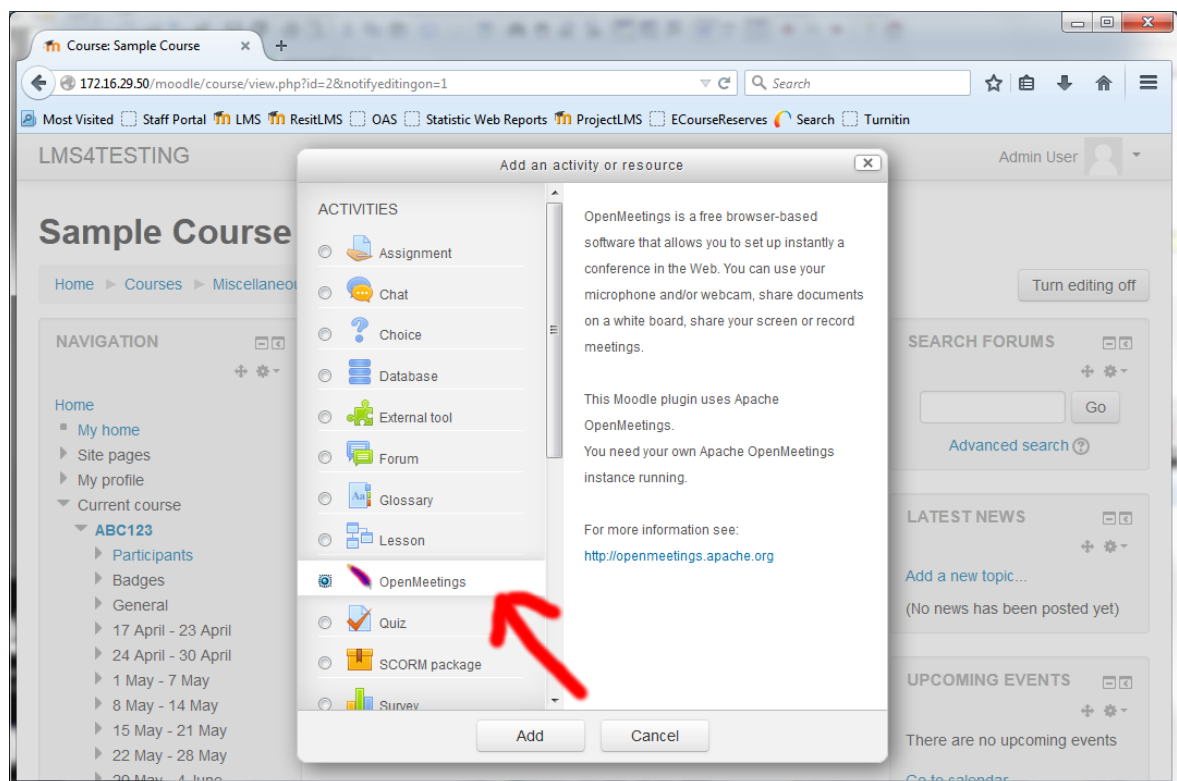


Figure 4: The Apache OpenMeetings plug-in at the WawasanLearn

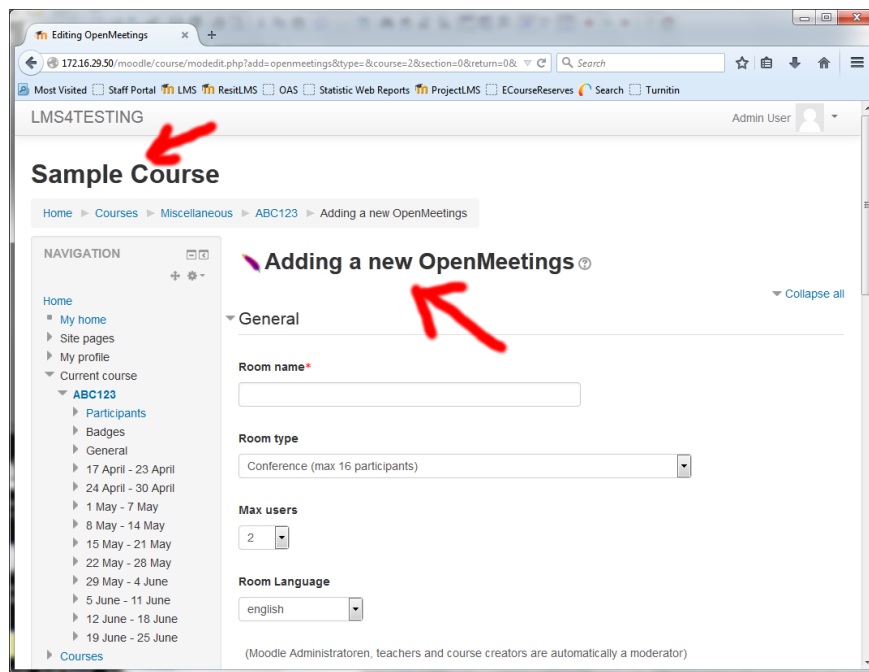


Figure 5: Adding a session of virtual classroom at the WawasanLearn

As shown in Figures 4 to 5, Apache OpenMeetings is embedded in the Moodle. It is linked with a plug-in available in the Moodle. The configuration screens of embedded Apache OpenMeetings are shown in Figures 6 and 7. In this testing platform, both servers are deployed using two different IP addresses, i.e. IP addresses 172.16.29.50 and 172.16.29.34 for Moodle server and Apache OpenMeetings server, respectively. In other words, Apache OpenMeetings is accessible using its own IP address, as shown in Figures 8 and 9. The similar process of accessing is applied for the usage of standalone Apache OpenMeetings (Figure 2). The live virtual classroom is presentation in Figure 10.

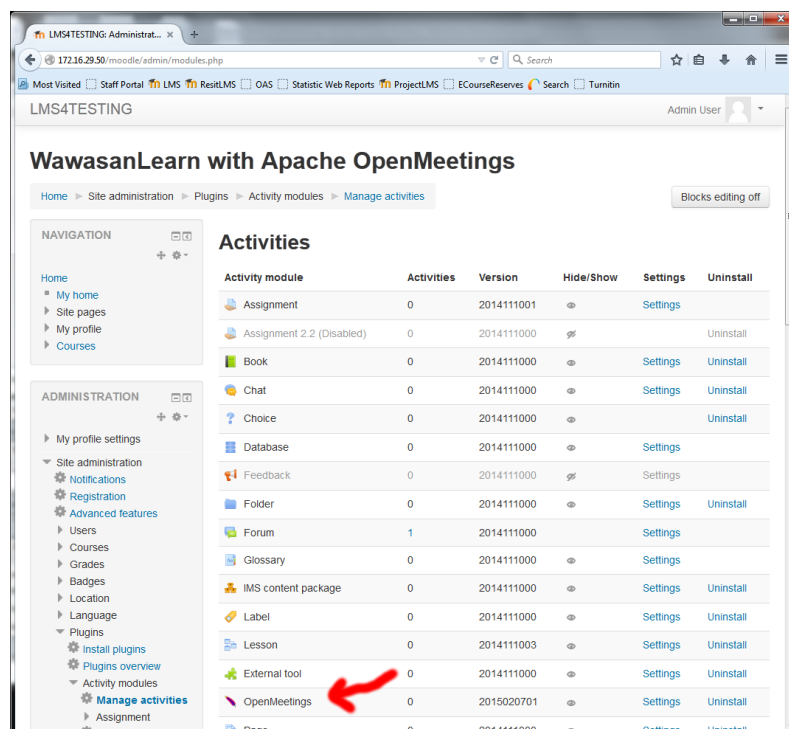


Figure 6: Configurable Apache OpenMeetings at the WawasanLearn

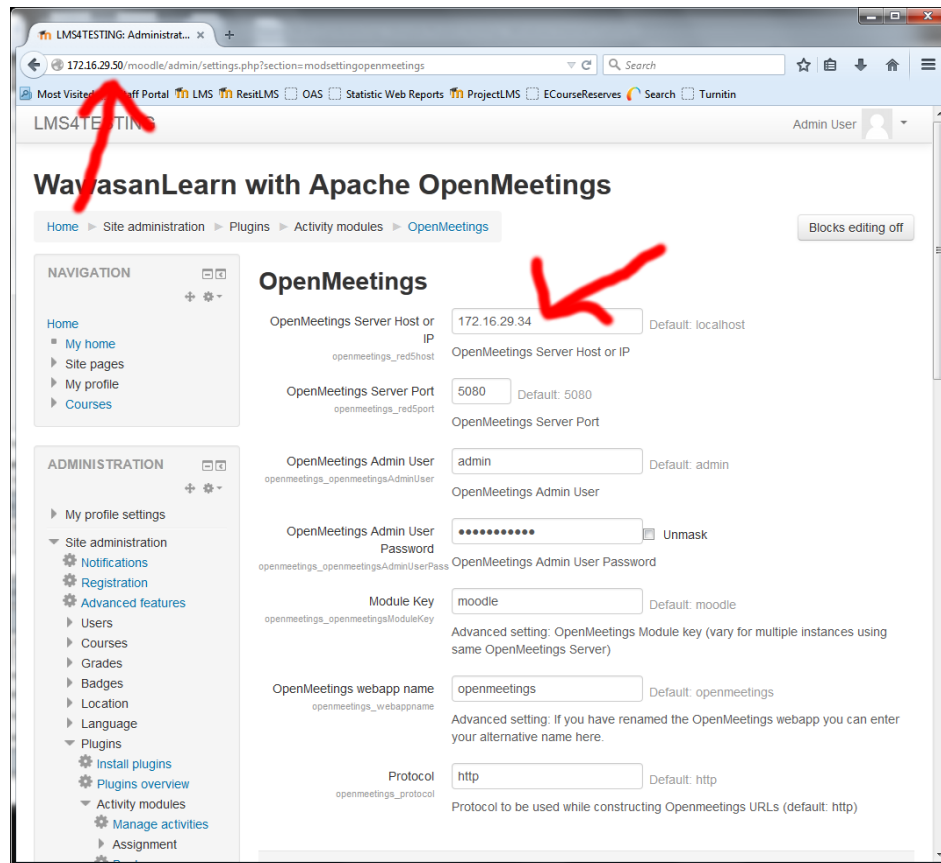


Figure 7: The details configuration of the Apache OpenMeetings at the WawasanLearn

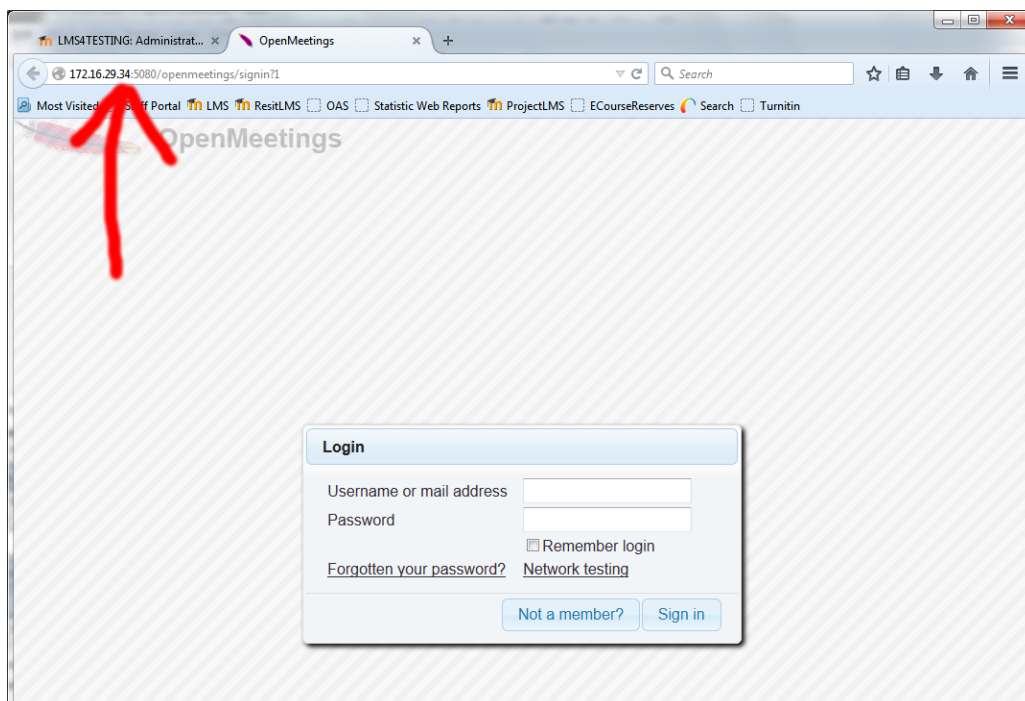


Figure 8: The login screen of standalone Apache OpenMeetings

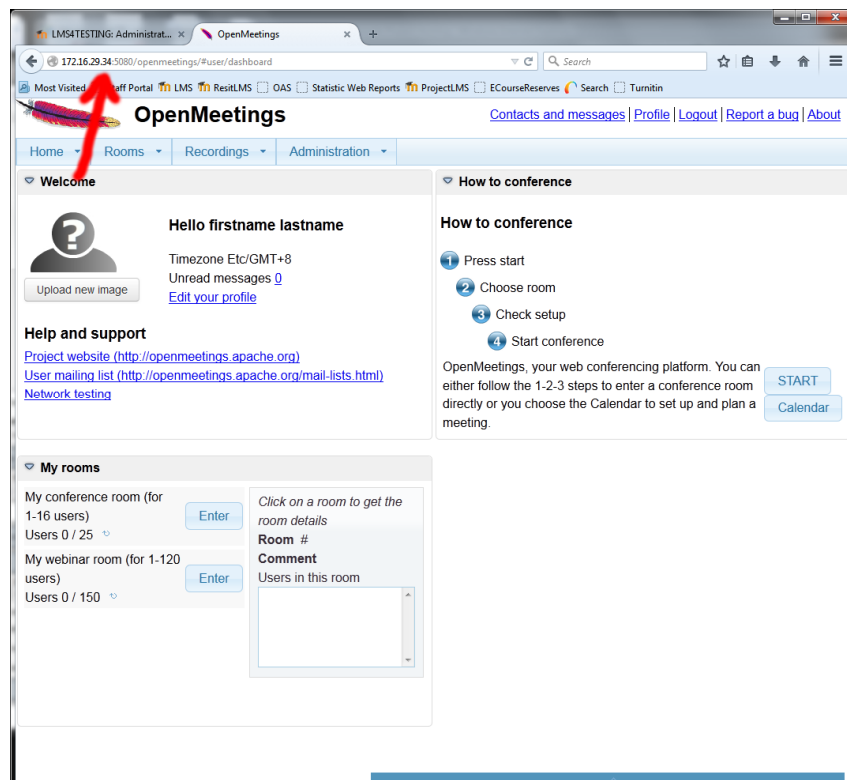


Figure 9: The standalone Apache OpenMeetings (after login successfully)

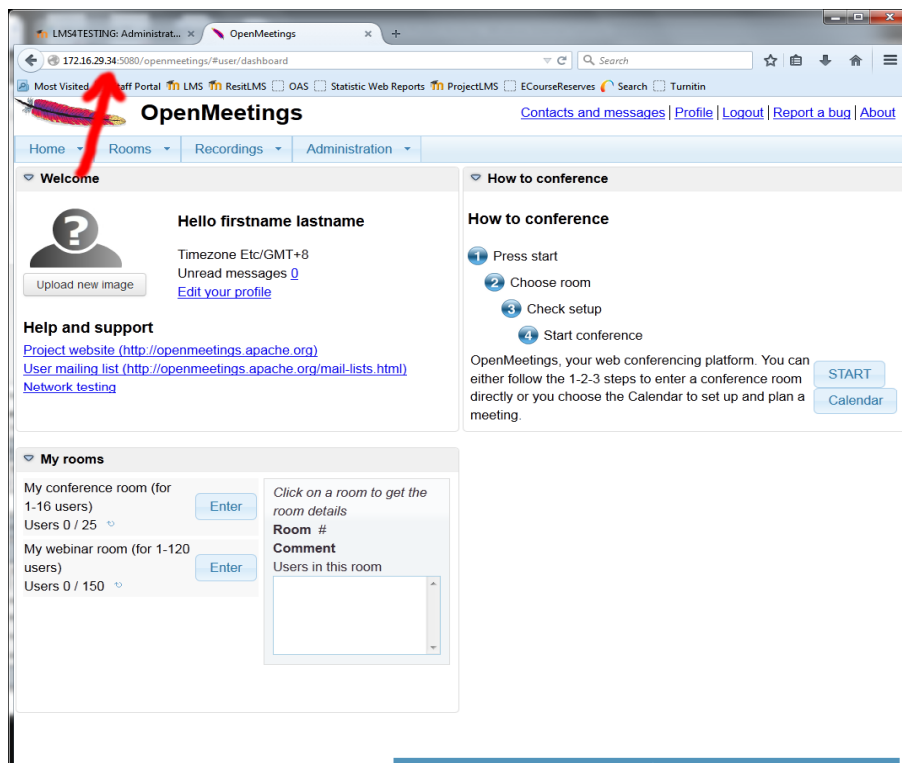


Figure 10: The standalone Apache OpenMeetings (after login successfully)

The proposed model is an expansion of WOU distance learning model using WawasanLearn, i.e. a Moodle-based e-learning platform. Course contents delivering is not limit to face-to-face-based tutorial classes at a limited geographical coverage location, such as WOU regional centres and WOU learning centres, as shown in Figure 1. The implementation of this virtual classroom may attract teachers and learners aboard. It expands the distance learning recruitment to a borderless mode, either in live or recorded video-audio environment. Figure 10 shows the previewing recorded session. Learners are allowed to replay the recorded virtual classroom after the scheduled date-time for all enrolled courses.

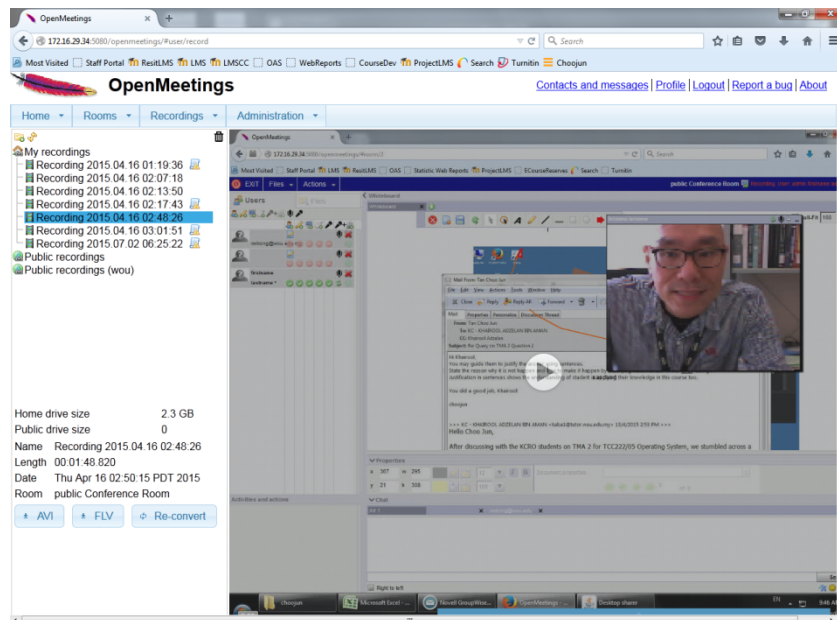


Figure 11: Previewing the recorded sessions in Apache OpenMeetings

Finding and Discussion

Hosting a web conferencing platform for WOU is a long-term strategy to remain control in the teaching and learning process, especially for WOU to attract the worldwide online learners. Teleconferencing in online learning offers a variety of educational opportunities as the reviewed literature in Section II . It allows student-centered learning where variety of online tools can draw on individual learning styles and help students become more resourceful learners. Online group work permits students to become more enthusiastic participants in the learning process and it directly contributes to collaborative learning.

Indeed, teleconferencing acts an alternative for course presentation delivery. It creates an indirect contact between teacher and learners in online mode. Meanwhile, teleconferencing offers an approach for teacher in visualizing the engagement of remote learners, especially in their inter-activities during the learning processes. Our model offers a solution, which is the highlighted issue of MOOCs lacking of assessment structures in a robust inferences learning environment (Reich, 2015).

Our findings in this study also note that teleconferencing technologies are not standardized, which has caused various issues related to interoperability, transparency, platform dependence, security, and cost. As such, data or application sharing, shared whiteboard, virtual room, virtual hand raising, mobile use, and presentations sharing or online slide shows are varied across the adoption software.

It is worth noting that this study suggests an extra assessment for the highlighted issue 'watching without learning' in (Reich, 2015). The proposed model benefits the peer interactions, i.e. between the teacher and students. On the other hand, it allows real-time assessments by teacher during the online course delivering. Adapting and changing of course content in the virtual classroom for learners are dynamic according to the real-time assessment by teacher.

Conclusion and Future Works

This study aims to propose a WOU virtual classroom to diversify and increase the capacity and technology of the university, especially in hosting an in-house teleconferencing platform. WOU virtual classroom has been successfully implemented in a testing platform. It allows in-house teacher, such as tutors and course coordinators of WOU, accessing for distance-learning activities. The identified MOOC issues, details of proposed model, discussion and finding are presented in this article.

For future work, WOU community may debug and develop new custom features on this testing platform. In addition to the existing deployed model, a feasibility study will be conducted together with the connectivity study. A small study group among the research members and other in-house community will first try-on the system. Experiments will be conducted with real communication environment between both remote learners and tutors. User-friendliness and available functionalities are the necessary area to be studied. Bandwidth and quality of service will be monitored in the one-year-plan project. Furthermore, selected optimization techniques will be identified into the learning effects in virtual classroom and tuning of bandwidth consumption.

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THE ROLE OF SERVICE QUALITY TOWARD OPEN UNIVERSITY WEBSITE ON THE LEVEL OF STUDENT SATISFACTION AT UPBJJ-UT AMBON

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Abstract

The purpose of this research is to find out the impact of variable service useability, information quality, and service interaction quality to students' satisfaction in applying open-university website. The population is non-primary education students on two district areas, that is, West Ceram and Southeast Moluccas including 30 respondents. This research uses purposive sampling as research method in which it fulfils total of 30 respondents. The questionnaire was tested by using reliability test and validity test. Then, it was continued with classic assumption test contained of multicollinearity test, normality test, and heteroskedastisity test. After that, there was hypothesis test and discussion. The result showed that variable service useability and service interaction quality have given positive and significant impact to students' level of satisfaction. While, service information quality did not give significant impact to students' level of satisfaction.

Key words: *Useability quality, information quality, service interaction quality and students' satisfaction*

Introduction

Distance learning system (SBJJ) in open university is different with learning system face to face in higher university. Students of open-university are forced to be able to study independently by using facilities and their competence they have to achieve their goal.

As a distance educational institution, characteristic of open-university is a distance that separate between students and lecturer. For that reason, technology had an important role as a learning media and a communication tool through internet to deliver distance education itself.

The use of this information technology and communication will bridge interaction between students and lecturer. We know that online education is used either on formal or informal education by using internet facility. Internet is a tool of technology product that can increase our need of education. Internet provides any information that can be accessed not only for certain districts but also in all areas of Moluccas province.

The higher development quantity of internet user can increase the benefit of internet itself. It is known that online learning through internet helps students to get much information about science study and other fields. In this case, students may visit open-university website to find their tasks by using facility of searching or browsing in internet. As Zeitahml, et al (2000) says that factors used to measure online service quality are accessibility, ease of navigation, efficiency, site aesthetic, and personalization.

According to O'Brien (2006), technology is a computer network containing many components to process information by using hardware, software, data management, and information network technology. Aji (2005) adds that information is data analyzed to be other beneficial data. On the other hands, information technology is recognized by Thomson *et al.* (1991) cited in Tjhai (2003) as benefit for technology users in doing their job or behavior in using technology while working. These definitions are based on use intensity, use frequency, and numbers of application or software.

Online service through title education or untitled education offers service for students in using internet as media. There are some stages of online in education program process such as: registration, entry test, payment, case study, case discussion, exam, assessment, discussion, announcement, etc. Distance education can use internet technology frequently, effective time and place, even increase education quality.

Brotoiswoyo (2003) defines internet as a compilation between development of information technology and telecommunication. It is also a wide and big computer network in the world to connect its user from one country to another country and to provide static, dynamic, and interactive information resource. Website had many pages of data, text, picture, animation data, sounds statically and dynamically to create hyperlink. While dynamic website is two way information website from user or owner to update databased on the user or the owner will. Some examples are Facebook, Twitter, Friendster, Multiply, etc.

According to Kotler (2002), satisfaction is a pleased or disappointed feeling of somebody when he compares his perception and impression toward his work or product result and his hopes. It means that consumer's satisfaction is achievement of his work as same as his hopes.

From the previous explanation, it can be said that the real condition UPBJJ-UT Ambon is many students do not use internet in fulfilling information service to support their education. Besides, other factor likes facility of computer was decreased for students to access open-university website, to see their scores and to follow online tutorial. The problem of this research is how far is the impact of variable service useability, information quality, and service interaction quality to students' satisfaction in applying open-university website. While The purpose of this research is to find out the impact of variable service useability to students' satisfaction in applying open-university website as learning media, to analyze the impact of information quality to students' satisfaction in applying open-university website as learning media, and to identify the impact of service interaction quality to students' satisfaction in applying open-university website as learning media.

Sample of research are non-primary education students from West Ceram district and Southeast Moluccas district. Sampling method in this research is purposive sampling. Data was collected by delivering questionnaire for respondents. The questionnaire consisted of questions about research that was conducted. Respondents would select the right answer by crossing or checking the option. The data were analyzed statistically by using validity test and reliability test, classic assumption test contained of multicollinearity test, normality test, and heteroskedastisity test, double regression analysis, and hypothesis test.

Result and Discussion

The primary data was collected in this research through questionnaire for respondents. The respondents were selected based on purpose/judgement sampling. The respondents were active students in open-university. While 30 questionnaire were delivered and returned or 100%. The respondents could understand and fill the questionnaire about age, sex, and length of using internet well.

Data analysis showed that most respondents from 2 districts were in age between 21 – 30 years old. Then, there were 16 or 53,3% men and 14 or 47% women. In addition, the number of respondents who used internet was 26 or 87%. While the number of respondents who did not use internet was 4 or 13%.

Validity Test

The result of validity test is shown in Table 1 below.

Table 1: The Result of Validity Test Data

VARIABLE	ITEM	VALIDITY DATA	NOTES
Usability dimension	DU1	0,970	Valid
	DU2	0,958	Valid
	DU3	0,899	Valid
	DU4	0,544	Valid
Information Quality dimension	DIQ1	0,851	Valid
	DIQ2	0,867	Valid
	DIQ3	0,897	Valid
	DIQ4	0,656	Valid
Service Interaction dimension	DSI1	0,978	Valid
	DSI2	0,984	Valid
	DSI3	0,971	Valid
Satisfaction level	TK1	0,946	Valid
	TK2	0,984	Valid
	TK3	0,978	Valid
	TK4	0,909	Valid

Source: Primary data analysis, 2014

The table displays about the correlation of each question. It can be seen that the coefficient value is $> 0,30$. It means that the question item in the research variable is coefficient valid. So the questions can be applied for the next analysis.

Reliability Test

Reliability test was using Cronbach Alpha. The result of reliability test is shown in table 2 below.

Table 2: The Result of Reliability Test Data

VARIABLE	RELIABILITY
Usability dimension	0,875
Information Quality dimension	0,819
Service Interaction dimension	0,976
Satisfaction level	0,968

Source: Primary data analysis, 2014

From the above table showed the reliability data by using cronbach alpha test it was found that the coefficient level data was good enough. It was caused of all research variables had alpha more than 0,6. So, all research variables are reliable.

Multicollinearity Test

This assumption test was used to find out whether there was correlation between independent variables in regression model or not. In doing multicollinearity test, the research concerned to analyze the correlation of independent variables by counting the tolerance value and the variance inflation factor (VIF). The result of multicollinearity test is shown in table 3 below.

Table 3: The Result of Multicollinearity Test Data

Variable	Collinearity Statistic	
	Tolerance	VIF
Usability dimension	0,689	1,451
Information Quality dimension	0,905	1,105
Service Interaction dimension	0,751	1,331

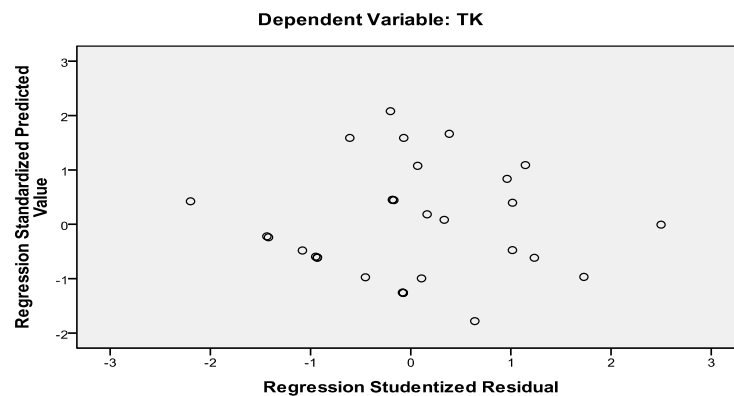
Source: Primary data analysis, 2014

The result of tolerance value in table 3 was not below 0,10 which meanted that there was no correlation between independent variables that more than 95%. The VIF value had got the same result where there was no correlation between independent variables that more than 10. It can be assumed that there was no correlation between independent variables in regression model.

Heteroskedastisity Test

Picture 1
Scatter Plot

Scatterplot



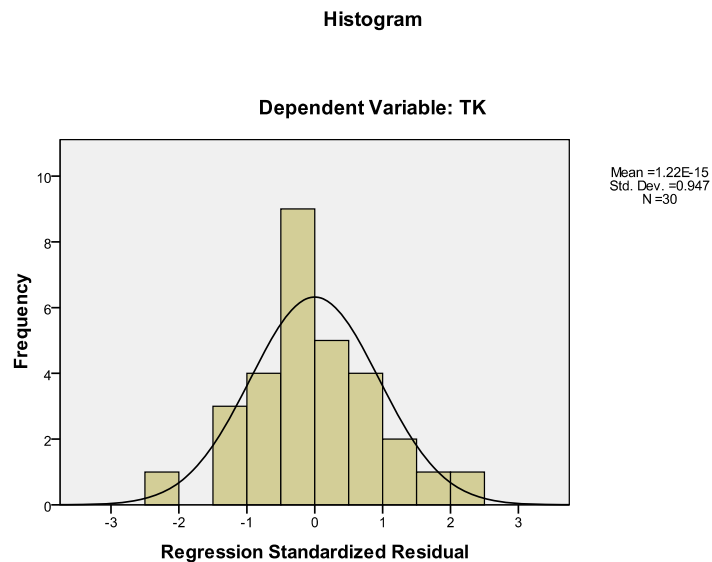
Source: Primary data analysis, 2014

From scatterplot graph, it can be seen that dots were randomly spread above or below 0 on axis Y. It can be concluded from classic assumption of heteroskedastisity that the regression model were free double linear and appropriate to be used in this research.

Normality Test

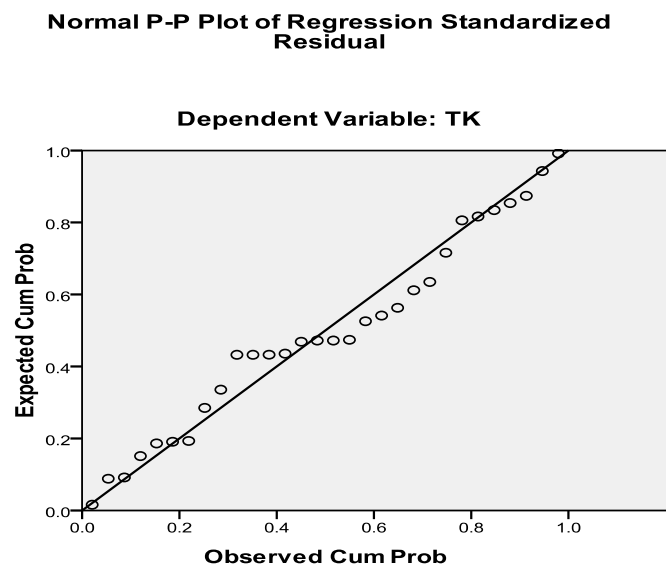
Normality test was done to identify whether distributed data was normal or not. The result of output histogram graph and normal plot graph is as follows.

Picture 2
Histogram



Source: Primary data analysis, 2014

Picture 3
Normal P-P Plot of Regresión Standardized Residual



Source: Primary data analysis, 2014

Based on histogram graph which is balance and dots on normal probability plot graph which is spreaded around diagonal line, the conclusion is data shows a normal distribution pattern.

Hyphotesis

Analysis of Usability, Information Quality, and Service Interaction dimensions to students' satisfaction level can be represented in double regression analysis as we can see in table 4 below:

Table 4: Partial Test (t-test)

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	.011	3.052			.997		
DU	.637	.176	.521	3.623	.001	.689	1.451
DIQ	-.017	.172	-.012	-.097	.923	.905	1.105
DSI	.528	.183	.397	2.882	.008	.751	1.331

a. Dependent Variable: TK

Sumber: Data primer diolah, 2014

Partial Hyphotesis Test

The Impact of Usability Dimension to Students' Satisfaction Level

From partial test, the impact of useability to students' satisfaction level by using SPSS program it can be said that t_{count} is 3,623 and t_{table} is 1,699. This value indicates that $t_{\text{count}} > t_{\text{table}}$ with $p > \alpha$ that is $0,001 < 0,05$. Based on that, useability had positive and significant impact to students' satisfaction level.

The Impact of Information Quality to Students' Satisfaction Level

According to regression value in table 4.7 it had got $t_{\text{count}} = 0,097$ and $t_{\text{table}} = 1,699$. This means that $t_{\text{count}} < t_{\text{table}}$ and $p > \alpha$ that is $0,923 > 0,05$. In other words, Information Quality had negative and insignificant impact to students' satisfaction level.

The Impact of Service Interaction to Students' Satisfaction Level

In the result of partial test on table 4.7 above, it had got Service Interaction to students' satisfaction level in which $t_{\text{count}} = 2,882$ and $t_{\text{table}} = 1,697$. This value indicates that $t_{\text{hitung}} > t_{\text{tabel}}$ with $p > \alpha$ that is $0,008 > 0,05$. Thus, Service Interaction dimension had positive and significant impact to students' satisfaction level.

Simultant Hyphotesis Test

Hyphotesis test states that there was a simultant impact of Usability, Information Quality, and Service Interaction dimensions to students' satisfaction level as shown in table 4.8 below.

Table 5: Simultan Test (f-test)**ANOVA^b**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	174.583	3	58.194	14.721	.000 ^a
	Residual	102.784	26	3.953		
	Total	277.367	29			

a. Predictors: (Constant), DSI, DIQ, DU

b. Dependent Variable: TK

Sumber: Data primer diolah, 2014

Based on f-test, it had got f_{count} was 14,721 with $p = 0,00$. Because of the probability was less than 0,05, so the regression model can be used to predict students' satisfaction level. Then it can be concluded that Usability, Information Quality, and Service Interaction had given simulant and significant impact to students' satisfaction level.

Discussion

The result of statistic analysis showed that the variable of useability dimension in this research had significant impact to students' satisfaction level as the users of open-university website service at UPBJJ-UT Ambon. In this case, the useability of website enables open-university students to study many fiturs through teaching learning process which is available in this website, language can be understood, and the website can operate well. The significant result emerged that factor of useability dimension is main indicator for students to have satisfied feeling when they used open-univeristy website.

Next, the result of the second statistic hyphotesis analysis indicated that Information Quality variable found on open-university website had unsignificant impact to students' satisfaction level in using open-university website service. It was caused by the accessibility of information for students could not be conducted well for limited internet equipments on both district areas that there was only some internet houses availed and minimal hotspot to access open-university website.

Finally the last hyphotesis analysis displayed that the variable of service interaction dimensions in this research had significant impact to students' satisfaction level in using open-university website service. It was found that the interaction service for non-primary education students was in form of online tutorial. It was hoped that the intercation was not only between lecturer and student but also between student and student in discussion and email service. This had supported their feeling of satisfaction in using open-university website service.

Conclusion

Based on the result of the first hyphotesis analysis that useability dimension had significant impact to students' satisfaction level in using open-university website service. Then, the result of the second hyphotesis analysis which showed that Information Quality dimension had unsignificant impact to students' satisfaction level. After that, the result of the last hyphotesis analysis indicated that service interaction dimensions had significant impact to students' satisfaction level. In addition, the result of simulant test showed that Usability, Information Quality, and Service Interaction had given positive and significant impact to students' satisfaction level in using open-university website service.

Based on the conclusion, the researcher can take several suggestion to be recommended for next research that is other research can use other variable which is not only limited to behavior factor but also technical factor to apply open-university website for students. Next is to have more samples which are not limited on certain areas but it can be advanced to all districts in Moluccas province. The last is to add instruments based on condition and environment of the research object.

The research result may give good contribution in the future such as to support and to enrich other researches in the field of PTJJ especially the institution. And to inform the developer of open-university website in this case Communication Central about the factors which impact on open-university website service.

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DEVELOPMENT AND PROVISION OF THE MOODLE-BASED SELF-STUDY SYSTEM FOR DIVERSE STUDENTS AT THE OPEN UNIVERSITY OF JAPAN

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Abstract

The Open University of Japan (OUJ) has a very diverse student body, including students who never graduated from high school and students who graduated from high school a long time ago. These students might find it necessary to review high school-level materials, particularly in the areas of science and mathematics. More than 40% of OUJ students are 50 years old or older. Older students often face challenges in dealing with information and communication technologies (ICT), the so-called digital divide. Improving English proficiency is another major challenge for many OUJ students. OUJ is committed to meeting the educational needs of the community, and therefore has developed and is providing a self-study e-learning system tailored to the needs of many of its students. The system is based on the Moodle platform, and applies the Sharable Content Object Reference Model (SCORM) standard for its content. By adopting SCORM, the system supports various types of content—Flash, HTML5, etc.—over the same learning interface. Moreover, because the learning logs are compliant with the SCORM run-time environment data model, students can check their progress in a unified format. The available content includes high school-level science and mathematics, ICT skills, English for different levels of students, and academic skills such as note taking, paper writing, and academic data gathering. OUJ faculty has developed teaching materials for some content which is directly related to their regular courses. Other material is based on content provided by textbook publishers and e-learning content vendors. More than 24,000 out of approximately 89,000 students at OUJ have logged onto the system at least once, even though there is no requirement to use the system for regular courses. The most often viewed online courses are Introduction to Personal Computers, TOEIC Start (an introductory course to prepare students to take the Test of English for International Communication (TOEIC)), and Remedial Mathematics. This paper provides a technical overview of the system, details the types of available content, and describes how the content is produced. Toward the end of the paper, we provide a summary overview of subjects covered by the content, and disclose some recent findings on the type of device students use to access the courses. Few studies have addressed this kind of large-scale self-study e-learning system, especially those based on SCORM standards. This study should provide valuable information to open distance learning institutions that face similar challenges to the OUJ.

1. Introduction

The Open University of Japan (OUJ) is a distance education university in Japan. It was founded in 1983, and marked its 30th anniversary in 2013. OUJ is the largest university in Japan in terms of student population. In the first semester of 2015, OUJ had 83,642 undergraduate students, 5,369 master's students, and 24 Ph.D. students. Student diversity is a hallmark of OUJ. In 2015 the Ministry of Education, Culture, Sports, Science and Technology of Japan conducted a survey among 779 universities in Japan (86 national universities, 89 public universities, and 604 private universities). Preliminary results indicate that 97.6 percent of new undergraduate students enter universities at the age of 20 or younger, and 99.5 percent of new students are 25 or younger (Ministry of Education, Culture, Sports, Science and Technology, 2015). Note that the nine pure distance learning universities, including OUJ, were not included in this survey. Figure 1 shows the age structure of undergraduate students at OUJ. As one can see, the structure differs significantly from that of typical

Japanese universities. More than half of undergraduate students at OUI have full-time jobs, and nearly one in ten are retired. Some students enter OUI without graduating from high school, or long after they graduated from high school. Note too that OUI had approximately 700 students with disabilities in the second semester of 2013. The percentage of students with disabilities at OUI is far greater than at other universities in Japan. Supporting students with disabilities using information and communication technologies (ICT) is a fundamental tenant of OUI's education philosophy (Hirose, 2015). Students thus come to OUI from very diverse educational backgrounds. Some students who have been away from school for some time may need high school-level remedial work, especially in science and mathematics. Elderly students may face challenges in coping with ICT (the so-called digital divide), while other students have problems with English proficiency. OUI faculty and staff are committed to provide a rich learning environment that accommodates these diverse students and needs (The Open University of Japan, 2012), and we believe that the online self-study e-learning system is an effective way to address these needs. This is what motivated OUI to develop and deploy the e-learning system that offers learning content which students can learn on their own. Technically, the system supports Sharable Content Object Reference Model (SCORM) compliant learning content. This paper will delve into the technical details of the system, the various types of SCORM-compliant content, and the content usage status of the system.

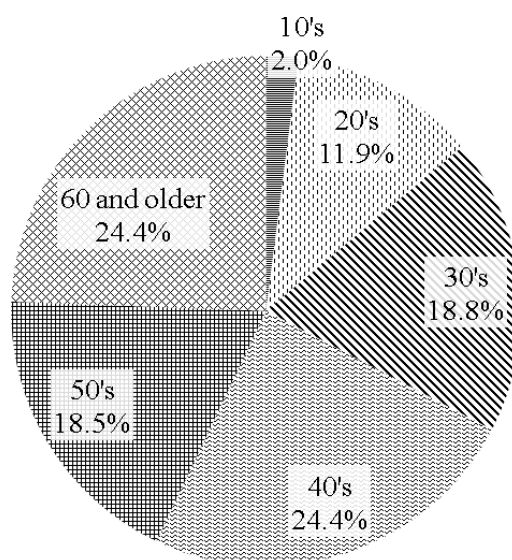


Figure 1: Age structure of undergraduate students at OUI (the first semester of 2015)

2. Details of the Self-study System

2.1 Overview of the System

OUI students have free access to the system. Figure 2 is a screenshot of the front page of the system. The front page presents a list of available courses. By selecting one of the courses, the user is transported to the homepage (the front page) of the selected course. For example, Figure 3 shows the homepage of the *Remedial Mathematics* course, which is listed at the top of Figure 2. This page lists an inventory of the various pieces of learning content for the course (only the first 14 items can be seen in Figure 3). Students can access the individual learning content items by simply clicking on an item. For example, Figure 4 shows the learning screen for the learning content item *Quadratic equation 1*.

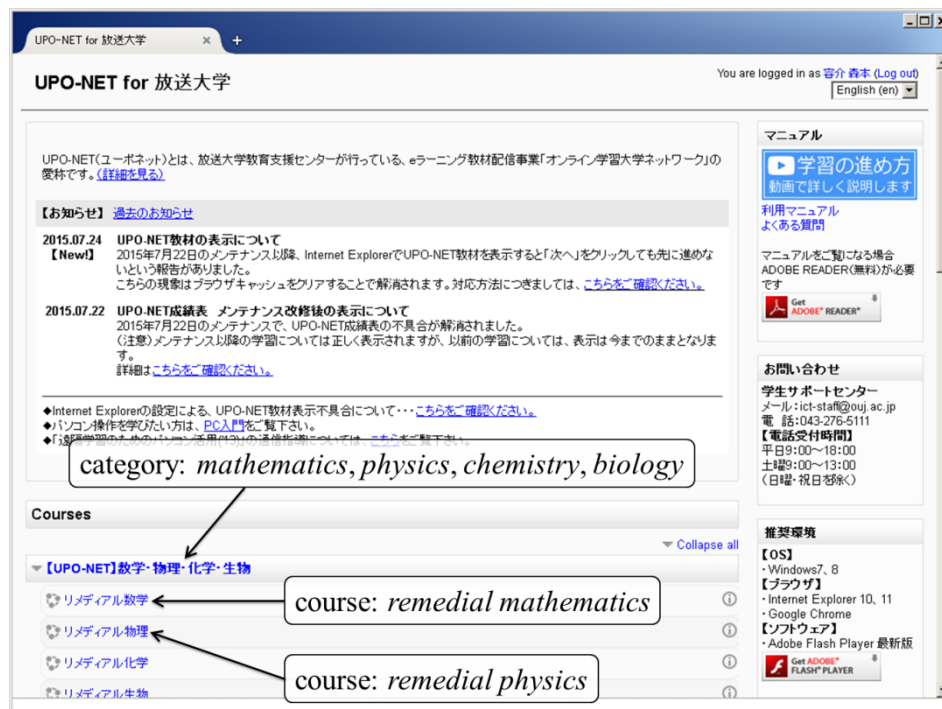


Figure 2: Front page of the system



Figure 3: Homepage of the Remedial Mathematics course

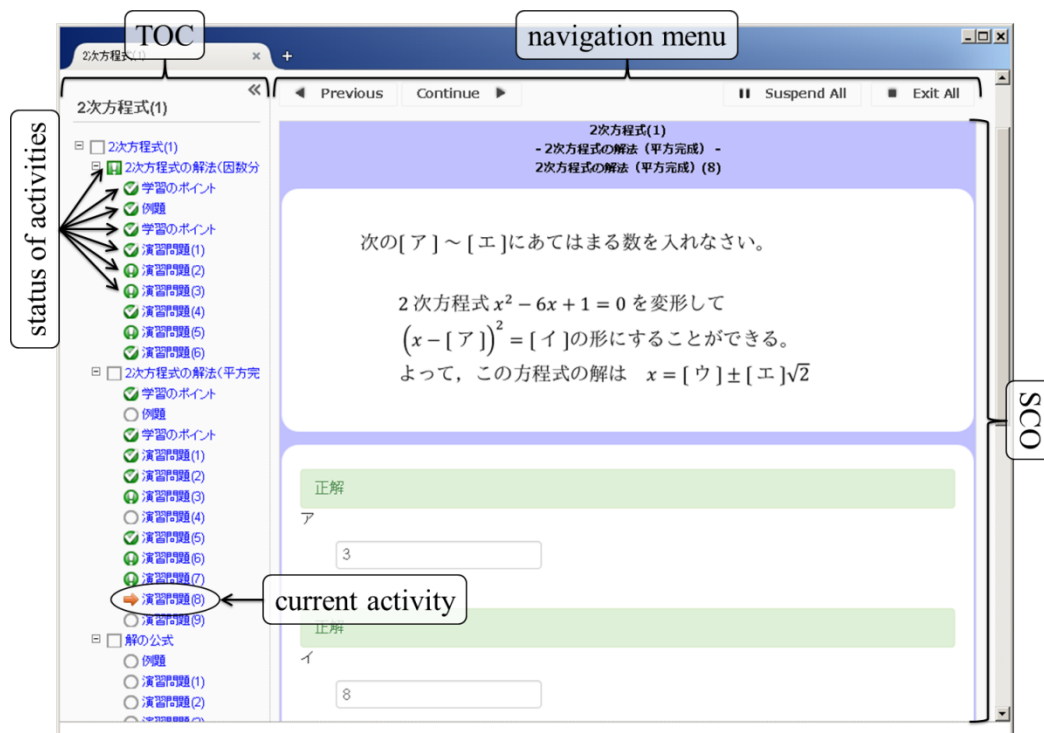


Figure 4: Learning screen of the system

Sharable Content Object (SCO) is a technical term defined in the SCORM specification as “a collection of one or more assets that represent a single launchable learning resource that uses the SCORM RTE to communicate with an LMS” (Advanced Distributed Learning, 2009). In other words, a SCO is a contents page of learning content. SCORM content is structured hierarchically, and each node of the tree is called an *activity*. In Figure 4, the SCO assigned to the current activity is presented on the right, and the table of contents (TOC) is presented on the left. The structure of the learning content, and the titles and current status of the activities are shown in the TOC. Note the navigation menu is in the upper right. Students can easily navigate to another activity by clicking on the title of the TOC or on the Previous/Continue navigation buttons. This learning content consists of 3 sections (not to be confused with the *sections* of a course) and 28 SCOs (4 SCOs of explanation, 3 SCOs of example questions and answers, and 21 SCOs of self-check questions and answers). This particular course has 112 pieces of learning content. Being rich in content, courses take considerable time to complete.

A learning screen for mobile devices is also provided. If the system is accessed by a mobile device based on Android or iOS (i.e., iPad, iPhone, or iPod), the learning screen automatically switches to the mobile version. The Android-based learning screen is shown on the left in Figure 5. Note that the TOC is hidden because mobile devices have limited screen space. The TOC can be displayed (screenshot on the right in Figure 5) by tapping the button in the upper left corner of the screen.



Figure 5: Learning screen for mobile devices

Students can view their learning logs and check their progress. Learning logs are described in the next section.

2.2 Technical Details of the System

The system uses Moodle as its e-learning platform. The current version of Moodle is 2.9, but we continue to rely on Moodle 2.7 because it is a long term support release and will be supported longer than Moodle 2.9. Single sign-on (SSO) authentication via Central Authentication Service (CAS) and the LDAP server that stores OIJ students' data is supported. This means that OIJ students can sign on to the system from other web applications such as the student portal site. When a student first logs onto the system, his or her name and other user information are pulled from the LDAP server, and a new Moodle user account is created.

All courses provided by the system are open to all OIJ students, and students can enroll in the courses by themselves. All learning content in the courses is compliant with SCORM 2004, which is a standard specification for Web-based e-learning systems and content. Although Moodle has its own built-in SCORM plug-in called *mod_scorm*, this plug-in can only run content that is compliant with SCORM 1.2 (Moodle community, 2015), which is the previous version of SCORM 2004. For this reason, OIJ has adopted and modified an open-source plug-in, called *mod_elecoa* (Morimoto, Nakabayashi, Sugiyama and Shibasaki, 2012), that supports SCORM 2004. The key modification relates to how learning content is delivered. In order to add content to a course using *mod_elecoa*, the administrator or a teacher needs to upload a SCORM package to Moodle. For the purposes of this study, a content repository for the system was created. By using the modified plug-in, the administrator or teacher can select a learning content item from the content repository instead of uploading it. Then, when student views the learning content added by the modified plug-in, its resources (files that are part of the learning content) are delivered to the student's Web browser from the content repository.

6 |



- 1) Moodle and themes,
- 2) A container, i.e., a plug-in, for displaying learning content, and
- 3) Learning content

Moodle is supported on mobile devices. Moodle first detects the student's device, and classifies devices into four types: *default* (modern Web browser), *legacy* (legacy Web browser), *mobile*, and *tablet*. Moodle is then able to switch themes or switch how various functions operate depending on the type of device. Note that if a theme is supported on multiple devices, then of course the same theme can be presented on the devices without employing the device detection capability. In OJ's system, mobile devices support is implemented in such a way that different themes are used for default devices and for mobile devices. This means that the *mod_elecoa* plug-in that presents the learning screen and the *block_elecoa_grades* plug-in for displaying grades must also be tailored for different types of mobile devices. Figure 7 shows screenshots of various screens for viewing grades on mobile devices. The first screen shows the list of learning content for a course, and the corresponding grades for each item of content. By selecting a learning content item, the screen shows grades for the various attempts on that piece of learning content. Then, by selecting the number of attempts, the screen shows grades for all activities beginning with the root of the activity tree.

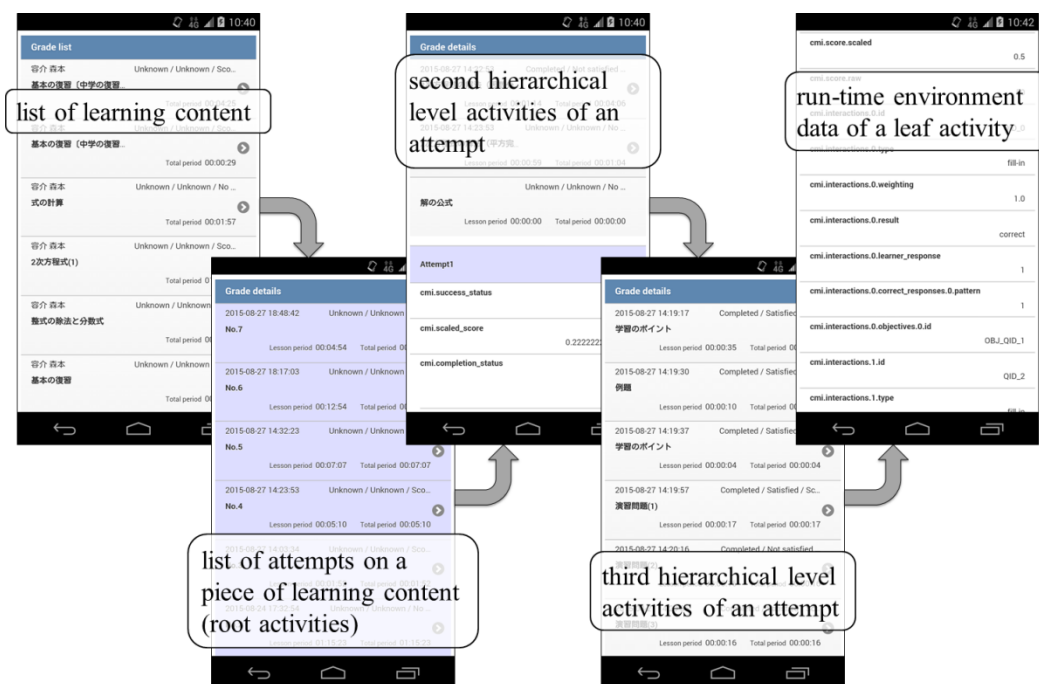


Figure 7: Mobile interface of the grade report

Some learning content is compatible with mobile devices, while other learning content is not. We will consider the various types of learning content in the next section.

2.3 Types of Learning Content

In addition to the common learning log format, the system also features a common learning interface based on SCORM. The system also supports considerable flexibility regarding the types of learning content. Here we will consider a few of the types of learning content supported by the system.

1. HTML5

The upper left figure of Figure 8 shows an example of learning content created in HTML5. This type of content permits flexible integration of text, figures, and tables. The specific learning content shown here illustrates mathematical formulas using MathJax, an open-source JavaScript library for mathematics. Note that an audio explanation is also available. Since this type of content is widely used in the system, two types of templates and a web-based authoring tool have been developed and are in use. The Sharable Content Object (SCO) depicted in Figure 8 employs the explanation type template. Audio and text can be included in this type of template. Another template is the question type, which was illustrated earlier by the SCO shown in

Figure 4. The question type template employs multiple-choice questions (that can have either one correct answer or multiple correct answers), and short text questions with accompanying brief answers. Questions can be asked using the audio capability, which is especially useful when studying the English learning materials. In addition, an authoring tool is available that can be used to create SCOs, and combine SCOs into a SCORM package which then become a piece of learning content in a course. This type of content supports mobile devices as shown earlier in Figure 5.

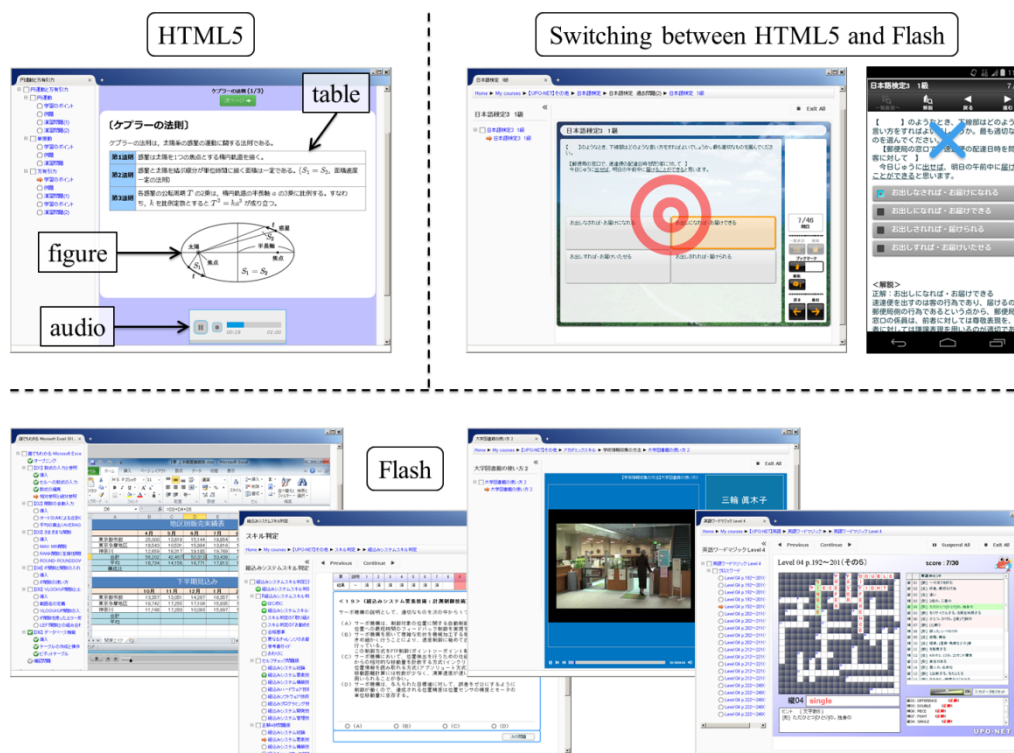


Figure 8: Types of learning content

2. Switching between HTML5 and Flash

The upper right figure of Figure 8 shows an example of learning content created using a proprietary authoring tool for quizzes and tests. This type of content is compatible with mobile devices. Content is displayed by Flash when accessed via Web browser on a desktop PC or laptop; and displayed by HTML5 when accessed from a mobile device.

3. Flash

The lower figure in Figure 8 shows four examples of learning content created by Flash. As one can see, these types of content are exceedingly flexible and can be used to create highly interactive content like simulations. Note, however, that this kind of content cannot be viewed on mobile devices that do not support Flash.

Some courses made up of the same type of learning content, while other courses are created from a combination of different types of learning content.

2.4 Courses of the system

As of this writing in September 2015, 33 courses are available through the system.

Four remedial science and mathematics courses are offered: *Remedial Mathematics*, *Remedial Physics*, *Remedial Chemistry*, and *Remedial Biology*. The remedial courses go back and cover high school level mathematics, physics, chemistry, and biology. Students cannot hope to understand college level materials if they cannot understand these basic courses. Students lacking basic academic knowledge can always relearn the subject matter by taking these remedial courses.

Ten courses are available for learning English, including five courses ranging from beginning to advanced to prepare students to take the Test of English for International Communication (TOEIC). While it is not easy to improve one's English by just taking OUI's regular courses, these courses have been specifically developed to improve students' English language ability.

Two ICT courses are available, *Introduction to Personal Computers* and *Information Ethics*. The *Introduction to Personal Computers* provides an excellent overview of computers and networks, and instructs students how to use Windows and the Office Suite. ICT skills are clearly beneficial to pursue a degree at OUI and to exploit its online information systems. We observed earlier that OUI has a good number of elderly students who are generally less familiar with the operation of personal computers. These courses give students the knowledge and techniques they need to succeed at OUI.

OUI offers nine courses of auxiliary content that support the broadcast lecture courses (OUI's regular courses provided by being broadcast on TV or radio). For example, practice exercises linked to the broadcast lecture courses are provided. After completing a broadcast lecture and the textbook, students can take these courses to deepen their understanding of the lecture. The system does not offer many of these auxiliary content courses (only nine out of more than 300 courses) intended to support the broadcast lecture courses. But we should note that the OUI does offer many such online resources that are not available through the system.

In addition, a wide range of other materials are provided to prepare students for test taking and to equip students with academic skills such as note taking, paper writing, and gathering academic information.

2.5 Creating Learning Content

Learning content for the system can be created in a number of ways. Here we will consider a few of the ways in which educational materials are created.

1. Created by professors
OUI professors come up with ideas for learning content, then commission OUI staff or subcontractors to create the content. For example, the auxiliary content courses that accompany the broadcast lecture courses were created in this way by the professors.
2. Created by purchasing a license to the material
Material offered by textbook companies and publishers may be converted into learning content with some additional work by OUI professors or outside collaborative professors. This often involves greater elaboration of commentary based on workbooks published by textbook companies. For example, remedial materials for science and mathematics are sometime produced in this way. Note that courses created in this way require licensing fees be paid to the companies providing the material based on the number of students using the material.

3. Purchase a license for commercial SCORM content

A few courses are based on commercial SCORM content for which a license is purchased and the content is simply used as is. For example, the *Introduction to Personal Computers* is SCORM content that was purchased from an e-learning content vendor and adopted as is. In this case too, licensing fees must be paid based on the number of students taking the course.

Content licensing fees come out of the OUI budget, so students do not have to pay additional fees.

3. Status of Use

As of the end of July 2015, the total number of students who have used this system—or at least logged onto the system—was 24,017. This accounts for approximately 27% of all the students enrolled in OUI. As noted earlier in Section 2.2, the students themselves register for the courses they want to take. As of the end of July 2015, the most popular courses in terms of student enrollment were *Introduction to Personal Computers* (2,017), *TOEIC Start* (1,885), and *Remedial Mathematics* (1,570). *TOEIC Start* is tailored for beginners preparing to take the TOEIC.

The system was upgraded to Moodle 2.7 in the latter half of October 2014. Beginning the next month in November 2014 through July 2015, we compiled statistics on the number of people accessing the system. During this nine-month period, an average of 204 sessions were recorded on the system per day. A single session is the interval from when a student begins to study until the student concludes studying on the system.

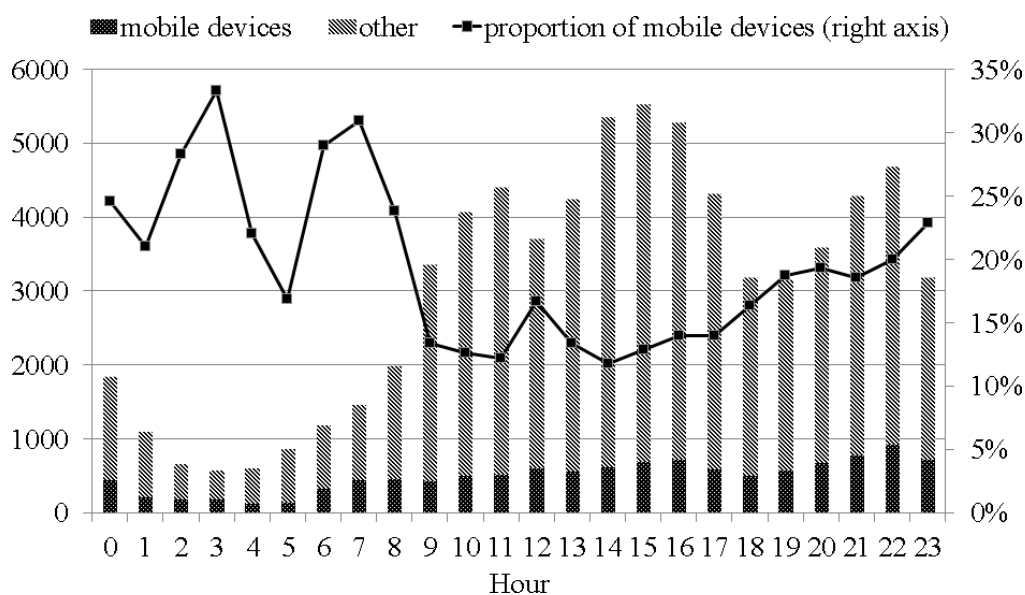


Figure 9: Number of learning content starts and percentage of learning on mobile devices

Figure 9 shows the number of learning content starts and the percentage of learning on mobile devices for each hour of the day. The axis on the left side of the graph shows the total number of learning content starts. One can see that the number of starts peaks at 11:00, 15:00, and 22:00 hours. The axis on the right side of the graph shows the percentage of learning on mobile devices. One will observe that the proportion of learning on mobile devices dips in the middle of the day, but then increases in the evening and later at night. This suggests that many students learn on computers on campus or at the workplace during the day, but employ smartphones or other mobile devices at night. The spike in mobile device users at 12:00 noon can probably be attributed to students accessing the system on their smartphones while on their lunch breaks.

Finally, we would note that there is no requirement to use the system for regular courses. The system has nevertheless become a popular educational option.

4. Conclusions

This paper presented an overview of the self-learning system offered by OUI. The OUI has a very diverse enrollment, including students who lack some of the basic academic capabilities to take college-level courses, have done poorly in English, or have trouble with computers. The OUI's mission is to produce and provide the e-learning content to help solve the challenges faced by these students. One significant feature of the system is that it exploits SCORM. This enables different types of learning content to be accessed over the same interface. Moreover, since the system has a common learning log recording format, students can view their learning content grades in a common format to assess their progress in a course. Today, 33 courses are available and being accessed by many students. Through an analysis of accesses, it was found that roughly 17% of students access the content using mobile devices. Further steps are required to make sure OUI offered content is fully compatible with mobile devices. Making OUI's learning content accessible to as many students as possible is a top priority. We must further consider how we might improve accessibility to OUI content and learning to students with visual impairments.

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MODELING OF A SKILL-BASED COURSE IN ONLINE LEARNING AT OPEN UNIVERSITY MALAYSIA: A DESIGN EXPERIENCE IN MOOC LEARNING PLATFORM

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Abstract

Modeling of a skill-based learning course such as art and music need a practical workflow in order to fulfil the nature of the course. Designing the content with hands-on experience needs to be concrete in nature so that the learners will be able to achieve certain standards of competency level. However, the challenges and issues in achieving the learning objectives cannot be denied due to its tangible learning outcome. This study intends to explore the modeling approach in designing the full online course for art and music for Open University Malaysia in openlearning.com. This study focuses on the importance of the course design workflow through modeling with technology for two courses; Visual Arts: Malaysian Batik Design and Malaysian Traditional Music. This study will report on the output of the design process through Semantic Networking Modeling technique. The output of the modeling technique will also be reflected in the content flow in openlearning.com that includes the task and the resources.

Keyword: *Modeling with technology, Semantic Networking, Instructional design for online learning*

Introduction

Deliverance of the skill-based courses needs to be concrete and explicit in nature. The skill-based course is a course that holds back a clear, tangible and noticeable activity. The learners need to be exposed to the actual setting to exhibit their knowledge and put them into practice. Perhaps terms such as ‘learning by doing’ or ‘hands-on experience’ would be more applicable in actual learning environment.

The skill-based course, which include art and music needs activity that can motivate online learners to be more responsive and proactive to the task. In order to achieve this, the design life cycle needs to be appropriate with the nature of the subject matter. The lecturer as a lesson designer need to understand first before passing it on to their students.

However, ‘The Glossary of Education Reform (2014)’ have listed more common synonyms, which include proficiency-based, mastery-based, outcome-based, performance-based, and standards-based education, instruction, and learning, among others.

Conventionally, skill-based courses such as art and music are conducted in the studio and are concrete in nature. The learner generally learn by doing and producing the tangible learning outcomes.

Teaching and Learning in OUM

At OUM, most of the contents are delivered online, some of them wholly online while some are delivered online to support face to face learning activity. Visual arts and music are conducted by the Faculty of Education and Languages. The courses are delivered through face to face interaction in most of the learning centre nationwide. Most of the art courses are conducted through blended-learning method. None of the course are delivered fully online.

Sometimes people are skeptical of the idea of delivering art and music courses online. *Most people do not immediately think that an art course can be taught online. However, the way in which this visual art course has been designed demonstrates the potential of the virtual environment to successfully make learning a positive and enjoyable experience while developing critical thinking and collaborative learning skills* (Saromines-Ganne&Leong, n.d.).

The whole learning process through Computer Based Learning can be very successful with the aid of the online learning facility. Due to the multi functioning features available in online learning, platforms are now more towards building the learning community and personalizing learning environment. In the context of Open University Malaysia, Kuldeep Kaur (in MacKay, 2007:136) reported, *the five components of the collaborative learning model illustrates its function in shaping the learning experience at Open University Malaysia.*

Table 1: OUM Collaborative Online Learning (COL) Model (Kuldeep & Zoraini 2004)

Components	Descriptions
Online Collaboration	Learners and tutors using myLMS to work together toward common goals, which in this case is to construct understanding of the requirements of a task, deliberating on ways to perform the task, sharing findings based on task performance and evaluating outcomes of a task.
The task	An assignment which needs problem solving, such as case studies, a debate or a project, designed for learners to apply course content in a real world situation, or to engage in critical examination of theories and findings of past researches.
Learning Support	Provision of online instructional support for the task from the tutor and subject matter experts and encouraging participation from all learners and guidance on the use of online/printed learning resources.
Discussion	Active tutor and learner participation through a synchronous threaded discussion, a way for peers to help each other and for the tutor to facilitate the collective solving problems or work related to the assigned tasks.
Knowledge Construction	The intended outcome of a task which is characteristically (a) something the learner is unable to do independently and (b) represents new knowledge or new learning.

Note: From “Enlivening the Promise of Education: Building Collaborative Learning Communities Through Online Discussion by Kuldeep Kaur, 2007, in McKay, E. (2007). Enhancing Learning Through Human Computer Interaction. Hershey PA 17033: Idea Group Inc.

Modeling with Technology

At OUM, the infrastructures are well laid out to cater for different types of teaching and learning approaches for different courses with variability of areas and field. Modeling techniques in organizing the content will give an opportunity to the instructional designers, lecturers and tutors to accurately identify the content and task and then to analyse it according to the learners’ preferences and needs.

The nature of the content in art and music generally needs to be formulated extrinsically beyond the learners through modeling techniques. What can be modeled? The questions raised by Jonassen (2006:15), of which he then added

“If model building externalizes mental model, then the learners should use a variety of tools to model a variety of phenomena. Different models engage different kinds of thinking.

In the context of this study, the connotation above shows that prior to the modeling of the Competency-based Learning (CBL) online course, the designers or subject matter expert need to consider the “*creator’s* (designer, teacher, subject matter expert) mental model’ and the *recipient’s* (learners) mental model.” They also need to observe the phenomena of the whole system and sub-system within the subject itself.

It is essential to determine the nature of the Competency-based Learning (CBL) course such as art and music prior to the design and development of the online course. Some of the arts courses involved the basic fundamentals of theory and practice, most of them involving skills and techniques in handling the medium heavily. In designing the content, the designer need to observe and reflect on the characteristics of the content. The nature of the material can be determined by identifying the entire system on its structure.

Issues and Challenges

The characteristic of the learners for art and music relies on the nature of the subject. The delivery of the content need to be concrete in nature. The learners gain more insight through questionings and understanding concepts, supported by critical thinking. Most of the art content are delivered via an inquiry-based model. *A large facet of arts coursework is inquiry-based, which means it revolves around questioning and understanding concepts versus finding the answer to a given problem. There are multiple right answers.* (Heilig et. al., 2010; Goldblatt, 2006 quoted by Ghanbari, 2015).

Confidence in the ability to teach music has been found to be a significant factor in the field of pre-service generalist teacher music education (Jeanneret, 1995; 1997; Hennessy, 2000; Holden & Button, 2006; Russell, 1996 quoted in Collins, 2014, p. 4).

The effective design of the content relies on the way and how it is modeled. According to the National Art Education Association, United State of America (NAEA) (2009) one of the standards stated is that *visual arts educators should have strong studio skills and a well-developed understanding of their own artmaking processes, qualities, and techniques. They can express their ideas, feelings, and values through the meaningful creation of artworks using different media, styles, and forms of expression.*

Most of the art classes are conducted face to face through studio-based teaching. Studio-based teaching does not merely focus on skills and techniques, but it also stresses on the theoretical aspect of art such as art appreciation, history of art, etc.

Harwood (2007) *brings studio teaching, the most frequent form of teaching within the art disciplines, to the fore as a crucial object of research because of its unique setting and potential to contribute to our educational knowledge.*(quoted in Svensson & Edström, 2011, p. 2).

Studio-based or inquiry-based can be enhanced by online facilities due to its capability of increasing the rate of communications through the learning community. It will enable the learners to expand their knowledge by sharing their skills and creative works. *Networks of learning are transforming how we see communities as crucial in expanding how teaching and learning are understood and embracing the unknown outcomes of these human interactions* (Leake, 2014: 26).

Teaching art and music is unique due to its complexity of explicit skills and knowledge. The instructional approach need to be as concrete as it can. The learner's self-reliance need to be reinforce to create a sense of curiosity and ability to produce their inspiration. Vella (2015) stated *we should not expect 'interactive' learning to run any smoother than whatever we have at present, because we can only imagine new classrooms via a process of ostranenie or estrangement; perhaps the ideal classroom for art is an "outlandish" place.*

Method of Modeling for Online Learning

Prior to the lesson design and its delivery, modeling can be an important task as a pre-cursor before performing another task such as design and development. Identifying key areas to fulfil the element of modeling is considered crucial to foster the traits owned by the learners.

Lesson design generally involves learning process while modeling involved subject matter. In modeling activity, the designer should consider the *subject matter as a system* (Jonassen, 2006:17) to make learning happen and to ensure the quality of instruction. Through the entire system the designer will be able to identify unique tasks, avoiding repetition of the task will enable the learner to keep their pace and feel 'fresh' with a new task. Mueller (2009) stated that in *learning process, there are three components involved in modeling: the model, or the person observed, the observer, the individual who acquires new knowledge or skills as a result of observing the model, and reinforcement, which, in part, determines which behaviors will be repeated.*

Saromines-Ganne&Leong (n.d.) reported in their study when developing online courses for the teaching and learning of visual arts, stating that instructors should:

1. enhance the online learning experience through multimedia delivery;
2. incorporate collaborative and cooperative learning activities to promote critical thinking and peer learning;
3. provide online students with timely feedback; and
4. design for asynchronous interactions instead of synchronous interactions for the convenience of the students.

Objective

This initial study intends to evaluate the effectiveness of the structure of the courses modeled based on *Modeling with Technology* (Jonassen, 2006). The nature of the modeling of the courses are based on the characteristics of Competency-based Learning (CBL) as stated by the report by *Council of the National Postsecondary Education Cooperative Working Group on Competency-Based Initiatives*. Two courses; Visual Arts: Malaysian Batik Design and Malaysian Traditional Music were developed and uploaded to Open Learning.com. The two courses are delivered through fully online learning with the support of textual and rich media resource and facilitate by two online facilitators according to their areas of expertise. This study also aims to conceptualize the content structure based on *Semantic Networking* (Jonassen, 2006) modeling technique.

Methodology

This study focuses on the design of the content. The design starts by writing the learning objectives followed by identifying the keywords for the topics from the subject by the Subject Matter Expert (SME). The SME then works with the Instructional Designer (ID) to generate the keywords into the proposed list of words that serves as a content. At the final stage, the content listed need to be clarified and verified by the SME and ID through filtering, to ensure that the content are able to fulfil the learning objectives. On the whole, the process is done through a 'top-down' process and after the

entire process is done, the content need to be revised through ‘bottom-up’ to ensure it meets the learning objective before it is delivered to the learners.

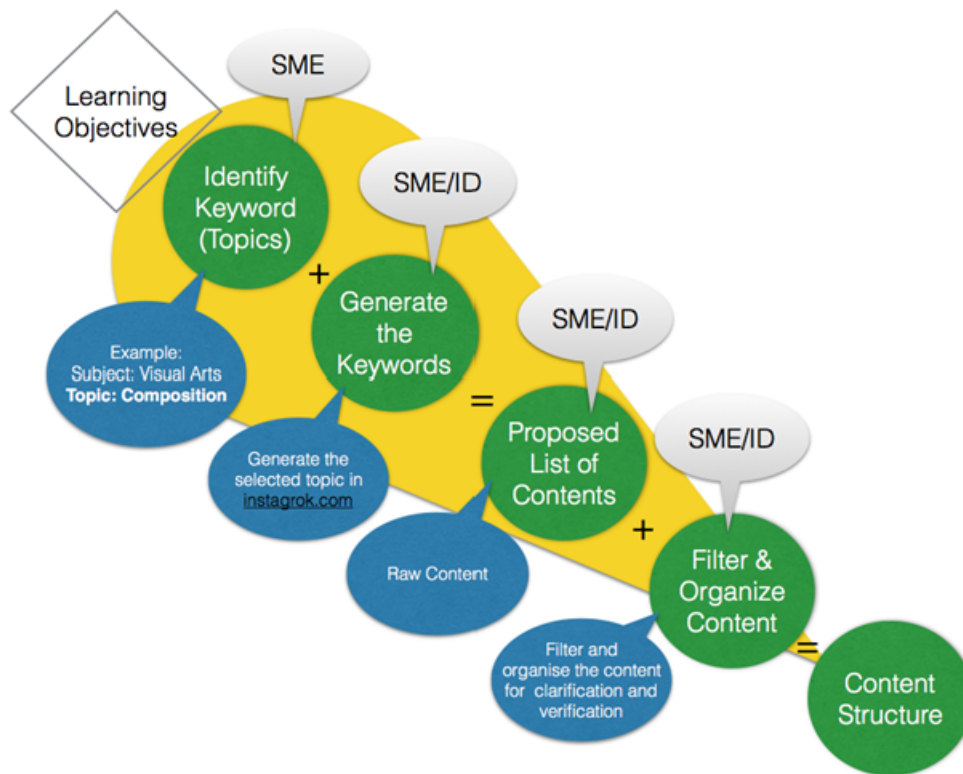


Figure 1: Research Design: The Process of Conceptualising the content structure

Conceptualisation of the Content

Figure 2 shows the semantic networking on the content on Malaysian batik generated by semantic web search at instagrok.com. The content generated by instagrok are categorized into three categories:

1. Floral design;
2. Fabric for textural; and
3. Floral pattern.

Each category carries different sub-content.

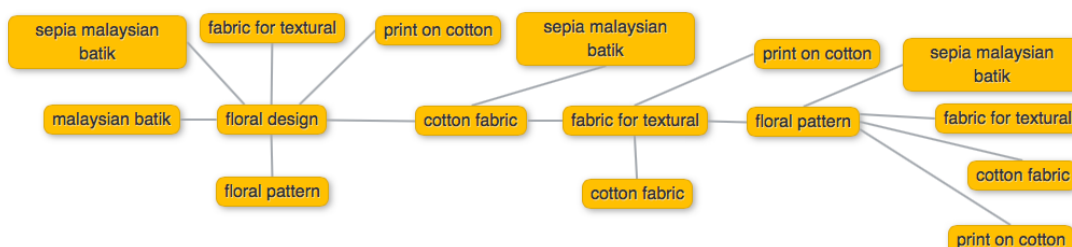


Figure 2: Screen from a concept map semantic web instagrok program represents content on Malaysian Batik

Figure 3 shows the semantic networking on the content on Malaysian Traditional Music. Instagrok generated the content into two categories;

1. Malaysia Traditional Music and
2. Traditional Music

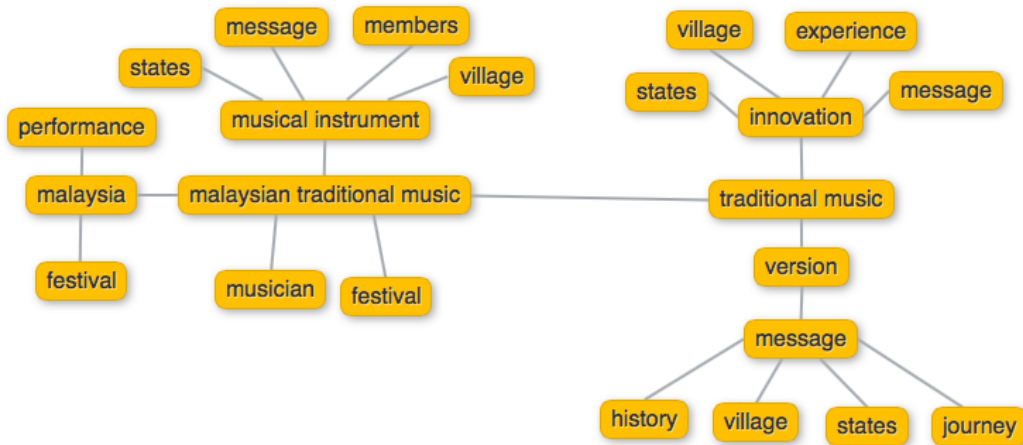


Figure 3: Screen from a concept map semantic web instagrok program represents content on Malaysian Traditional Music

Figure 4 shows shows the semantic networking on the content on Ulik Mayang. Instagrok generated the content into five categories;

1. Fisherman
2. Ulik Mayang
3. Dance
4. Worship and
5. Ceremony.

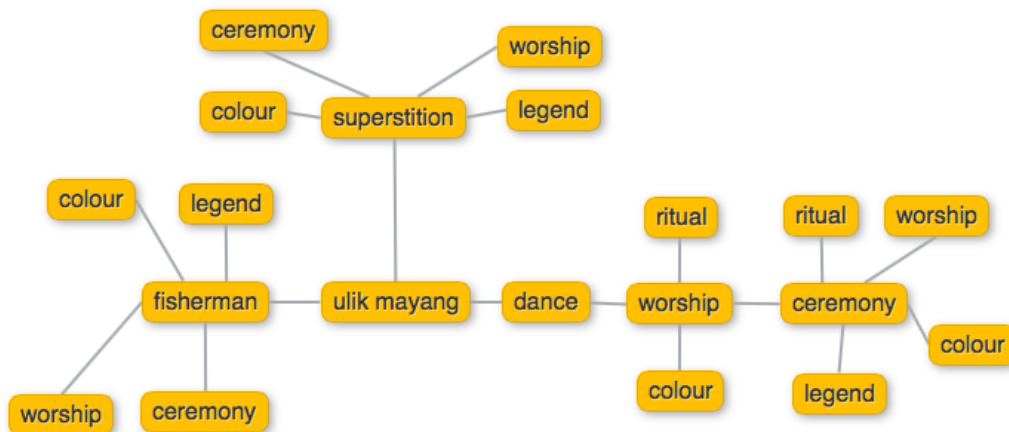


Figure 4: Screen from a concept map semantic web instagrok program represent content on Ulik Mayang

Figure 5 shows the semantic networking output on the combination of the content on Visual art and Music Instagrok generated the content into three categories for Visual arts;

1. Painter;
2. Emotion; and
3. Technique.

Two categories for music are;

1. Fraction and
2. Expression.

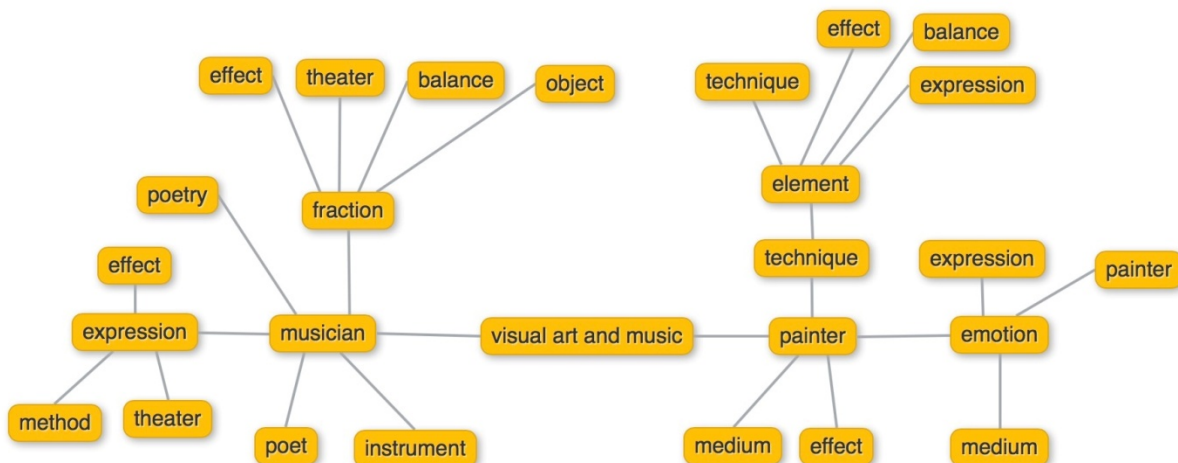


Figure 5: Screen from a concept map semantic web instagrok program represent combination of the content on Visual art and Music

The Outcomes

1
Module 1: Music Scale I
14 July

Music Scale 1 (PPT, 2.25 MB)

Music Scale 2 (PPT, 3.60 MB)

Do, Re, Mi with hand signs by cantusyouthchoirs

Music Scale 2 (PPT, 3.60 MB)

Major Scale (Do Re Mi ...) Over Binaural Beats by

Curwen Hand Sign at Twinkle Twinkle Kodaly by Joanna

[Skip Module →](#)

Activities

- Activity 1: Vocal Ability
14 Jul 2015 — 21 Jul 2015
- Activity 2: Curwen Hand Sign
14 Jul 2015 — 21 Jul 2015

Further Study

- Reference
14 Jul 2015 — 21 Jul 2015

Open

Class of 2015 (24 students, 1 comment, last active about a month ago)

Invite your students

Invite by email

✉ Invite Students

Students in the class

Search for a student...

13 students are pending enrolment. [Show invited students.](#)










✉ Send Reminder Message

↔ Export Data

🎓 Issue Certificate

🗑 Remove Students

☰ Sorting ▾

	Student	Enrolment Date	End Date	Progress	Comments	Kudos	Gender	Why are you taking this course?	Your areas of interest?	University Name	Student ID
<input type="checkbox"/>	  Aimelie Ronquillo 	22 Jul 2015 05:44am	30 Aug 2015 12:00am	45.45%	0	0	Female	To learn about Batik	Art		
<input type="checkbox"/>	  senag 	22 Sep 2015 08:39pm	31 Oct 2015 12:00am	83.33%	0	0	f	artist	art		
<input type="checkbox"/>	  AIMEN MAHIR 	24 May 2015 06:38pm	22 Aug 2015 12:00am	7.14%	0	0					

Online -1

This course aims to introduce the participants on Malaysian Traditional Music; Ulik Mayang. The participants will be exposed to the description and characteristic of Ulik Mayang dance and music.

Activities

- ELMO Course Admin – edited 2 months ago – [history](#)

This module introduces you to the process of designing motives for batik. You will also be exposed to 'stylization' approach to the creation of motives design portfolio for batik.

[Skip Module →](#)

Stylization in Art

Stylization process in batik design

Malaysian Batik Design. Motive: Flora (Ref.:

Malaysian Batik Design. Motive: Fauna (Ref.:

Malaysian Batik Design. Motive: Geometric (Ref.:

Activities

• Task 1: Portfolio I - Organic Design	14 Jul 2015 — 21 Jul 2015
• Task 2: Portfolio II - Geometric Design	22 Jul 2015 — 29 Jul 2015

Further Study

• 1. Video References: BEHIND THE SCENES in the Liberty Art Fabrics Design Studio	14 Jul 2015 — 29 Jul 2015
• 2. Video reference: Oriental Floral Designs and Motifs Oriental Influence on Floral Design	14 Jul 2015 — 29 Jul 2015
• 3. Video Reference: Flowers are Fun! - Ink Drawing	14 Jul 2015 — 29 Jul 2015

3 Module 4: Block Print Batik 15 August

This module aim to introduce the participants on *batik cap* design in Malaysia. The participants will also be exposed to the proses of making 'batik cap' focus on the techniques

Batik Cap Technique

Traditional Batik Documentary in Terengganu by Nice

Creating Copper Block for Block Print Batik by

Further Study

• List of Reference	15 Aug 2015 — 22 Aug 2015
• 1. Video reference: at Kuwait Islamic Arts Center (in Arabic)	15 Aug 2015 — 22 Aug 2015

ELMO Course Admin - edited 3 months ago - history

Conclusion

The study focuses on the design and curating of the content. The process of construction of knowledge can be flexible and fluid due to the evolution of web called Web 3.0. This study is rooted from the ideas of Jonassen (2006: 103) on semantic networking, or concept mapping stated as the process of constructing concept maps - of identifying important concepts, arranging those concepts spatially, identifying relationships among these concepts and labeling the nature of the relationships among those concepts. The topics content is identified and track from the main topics through instaGrok.com. instaGrok is a search engine that combines sophisticated semantic technology with an interactive user interface (instaGrok, 2014).

The process of conceptualizing the content can be easier with the modeling technique by using an appropriate tool. It enables the SME and ID to produce the quality content faster as most of the task in the process are done by the semantic search engine tool. In Web 3.0 Hina (2012) mentioned Web 3.0 as, "It is a Web of Data" and "changing the web into a language that can be read and categorized by the system rather than humans."

Integration of the content is more flexible and effortless by combining both keywords. Larger content can be created due to its (modeling technique) ability to expand the content area in semantic web search engine.

The study only stresses on the conceptualization of the content through modeling technique; the outcome is not tested on the actual audience. More study needs to be conducted on the learners' engagement and understanding on the content delivered.

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DEMANDS OF USABILITY AND ACCESSIBILITY OF OPEN EDUCATION RESOURCES (OERS) AND MASSIVE OPEN ONLINE COURSES (MOOCS) AMONG STUDENTS WITH DISABILITIES

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Abstract

In last two decades Worldwide both MOOCS and OER have raised tremendous interest by open and distance education institutions and students with disabilities. Both are seen as a means to increase the accessibility and quality of higher education to special need or disabled students. At higher education very few researches are available on MOOCS and OERs in reference to disabled/special need students. With huge demands of usability and accessibility of these means of knowledge, number of problems and issues are faced by the special need students/disabled people. The current study was to highlight these problems and issues for the designers, developers, instructors and administrators of these courses for serious considerations while designing, developing, offering and conducting these courses. In a survey study disabled students/people highlighted problems of web accessibility, audiovisual content of MOOCS, eContent, quality of sound and image, interactive services that makes the participation and communication of the participants/students with physical/functional disabilities. They also pointed out the problems/issues in using assistive technologies while navigating in the MOOC environment, in automated assessment and the process of engaging with fellow students through forum posts and collaborative group work. A large number of disabled students were concerned with use and accessibility of OERs because they were not familiar with the policies and rules of usability and accessibility. It is recommended by the researcher that designer, developed, administrators and instructors should consider these problems and issues while developing, conducting and assessment in MOOCS and OERs for maximum usability and accessibility.

Introduction

Special need students, teachers and researchers of every field commonly use Open educational resources (OER) because of freely accessible, openly licensed documents and media. The visually impaired students are often access or reuse OER for their learning and research. They access these resources through common use software like JAWS Screen Reader, NVDA (Windows), Serotak System Access (Windows), Apple VoiceOver (OS X), ORCA (Linux), BRLTTY (Linux), Emacspeak (Linux), Spoken Web and Chrome Vox. The use of open file format to be an important feature of OER but this is not a universal recognized requirement. Kauppinen (2013) said that OER development and promotion is mostly motivated by a need to curb the commodification of knowledge and also provide an substitute or enhance educational paradigm (Sanchez, 2013).

The 21st century is Information Communication Technology century which circled all section of our life. We also experience a major paradigm shift in traditional ODL or formal system of education and training to online or eLearning. With online learning there was issue of cost and skills needed for the ICT skills. Also the time, location and number of issues related to online learning. Usability and accessibility of OER and MOOCS (massive open online courses) among special need students were very minor highlighted by instructional designer or developer. Massively Open Online Courses (MOOCS) have become the buzzword these days and are very popular because of for masses and open from all formalities and cost. MOOCS and OER are recent and extensively researched development in Open and Distance learning and introduced in 2008 (Bozkurt, 2015) and emerged as a well-accepted form of learning in 2012. The major aim of MOOCS is participation of unlimited people/learner and it is open through the web. Many MOOCS provider offer interactive platforms which support

community interaction among students, teachers and other stakeholders of teaching-learning process. This interaction is well supported by traditional course materials like video recorded lectures, reading and problems sets.

In early years of OER and MOOCs most of the emphasize was on features of open-access, like content open licensing, structure and learning goals, for the promotion of reuse and remixing of these resources. In the later years OER and MOOCs use closed licenses for the course materials while maintaining free access for students (Pappano, 2014; Lewin, 2012; Wiley, 2013; Cheverie, 2013). On other hand we have criticism on OER and MOOCs as Robert Zemsky (2014) said both have passed their peak: "They came; they conquered very little; and now they face substantially diminished prospects".

Massive Open Online Courses and Open Education Resources are best examples of development of online or eLearning environment for a radical computer and mobile-based set-up along with Web 2.0 (social media) technologies that will direct to the developing the different types of learning applications which improve the communication and collaboration process. The accessibility and reusability to MOOC and OER platforms are still barriers for special need students because of lack of usability and accessibility on the learning resources as per their special needs. All such issues of MOOCs and OER are present ultimately as barriers of accessibility and reusability which also add extra difficulties for special need students. The issues of accessibility and reusability are extra problems such as the need to develop particular digital or even social skills for special need students. In practice, e-learning, MOOCs and OER services are delivered mainly by means of web technologies. For this reason, OER and MOOCs correspond into an area/circle in which the paradigm for web accessibility is of immense application. In this sense, the Web Accessibility Initiative (WAI) from W3C promotes accessibility by means of guidelines related to the content (WCAG), the authoring tools (ATAG), and the user agents (UAAG). In MOOCs platforms multimedia designs that are very well-accepted and based on inventive audiovisual content with a high technical quality of sound and picture as well as the engaging services that make the involvement and communication of their students possible by facilitating accessibility for people with disabilities and convert them to active users of the learning. (Francisco, 2015)

Students or people with special needs using assistive technologies may have problems while accessing the MOOCs and OERs, registration process and even using the learning content contained in the platform. More issues and demands appear while doing largely automated assessments and the process of engaging with fellow students through forum posts or collaborative group work. (Francisco, 2015)

Assistive technologies are major tools for usability and accessibility for the people with disabilities or students with special needs. The content and learning material available at MOOCs and OER are not much accessible and usable for them because of number of barriers and problems with respect to instructional designing. With the time instructional designers/developers of eContent, MOOCs and OERs considering such issues on the demands of usability and accessibility among students with disabilities. There was dire need to conduct a study on demands of usability and accessibility of MOOCs and OERs among students with disabilities that as instructional designers of MOOCs and OERs we came to know what are the demands of people with special needs, especially physically disabled, visually impaired and hearing impaired.

Literature Review

Open Education Resources (OER) idea has several operational definitions. It was first time coined at UNESCO's 2002 Forum in Paris, France on Open Courseware and designated "teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions. Open licensing is built within the existing framework of intellectual property rights as defined by relevant international conventions and respects the authorship of the work". (UNESCO, 2002)

According to William and Flora (2013) OERs are resources of teaching, learning and research exist in the communal domain or have been released under an intellectual property license that allows their free use and re-purposing by others. It is included total course, or material of the course, modules of the courses, textbooks, live or recorded videos, quizzes, any software or any other tools, materials and techniques learner used to support access to knowledge.

If we go with the literature on Open Educational Resources (OER) we can conclude that OERs getting popularity with the time because of it is freely accessible, openly licensed documents and media that are useful for teaching, learning, and assessing as well as for research purposes. Now a days, it is a one of the leading trend in Open and Distance Learning system as a result of the movement of openness. In literature we also found that there are researchers or experts with the point of view that use of an open file format should be an important feature of OER, which is not a universal acknowledged requirement. (Bozkurt, 2015)

The growth or expansion and promotion of OER is often motivated by a desire to curb the commodification of knowledge and provide an alternate or enhanced educational paradigm. (Kauppinen, 2013)

There are number of issues contagious to usability, access, quality and costs of information and knowledge over the OER as well as MOOCs. These are also related to provision of content and learning material available at OER and in MOOCs. (Huyen, 2008; Matera, 2011) The growth of MOOCs and OER provided number of opportunities for all types of users especially people with disabilities for improving access and transmit of knowledge and information in educational and related institutions. The experts and researchers of OERs and MOOCs concluded that there is an imperative need to address these issues especially for people with disabilities. In developing countries like Pakistan, India, Bangladesh and Sri Lanka we need to clarify or define the technical and legal frameworks and policies for sustainability of these initiatives.

Usability and accessibility are two most important aspects of openness, there should be no technical, cost and legal barriers for the users. But unfortunately instructional designers are not trained and considering such issues for the people with disabilities. The studies on OER and MOOCs recommended that the end user be able to use or read the resources available and they can adapt, build upon it and thereby reuse with attribution to creator/authors.

The ideas of both OER and MOOCs are flourishing at the moment, its responsibility of creator, administrators and management to address the challenges and issues (accessibility and usability) raised by the users (especially people with disabilities). In a study conducted by Huyen (2008) three challenges or issues were identified which are lack of awareness regarding copy rights, quality in open content and sustainability in the longer run. In other studies conducted in context of users especially people with disabilities issues mostly reported were quality, software, internet, accessibility and usability.

Current OERs and MOOCs are designed for specific uses that typically focus on allowing users to enter and access fairly structured data like contacts, lists, dates, financial information and memos, to send and receive particular information through the software. Here we mean usability and accessibility of eContent, materials, files, documents available at OERs and MOOCs. But instructional designers of MOOCs and OERs developers they can work well for the issues open and fairly accessible and usability for people with disabilities like physically disable, hearing impaired and visually impaired.

Accessibility is an increasingly significant factor in the provision of learning and training and is the key to strategies to support ‘inclusion and participation of people with disabilities’. (Phipps et al., 2002) Instructional designers or MOOCs and OERs recommended number of strategies to improve accessibility of People with disabilities. The moral case that promoting the inclusion and participation of disabled people through ‘inclusive’ product design is a moral and ethical activity. Social responsibility, in the sense that society defines and constructs notions of disability. This is a social model of disability and puts the case that disabled people do not face disadvantage because of accessibility and usability issues. Technical efficiency, namely that accessible technology in MOOCs and OERs will usually be more interoperable and so reduce future development costs. Legal requirements, like in UK, the Disability Discrimination Act 1995 (DDA) and Special Educational Needs and Disability Act 2001 (SENDA) prescribe minimum levels of accessibility.

Assistive technologies are any items, pieces of equipment or product systems, whether acquired commercially off-the-shelf, modified, or customized, used to increase, maintain or improve functional capabilities of individuals with disabilities in education and at home. Accessibility and usability in OERs and MOOCs are major issues and problems of people with disabilities. In number of survey studies on accessibility and usability with Mobile devices, computers, assistive technologies disabled students/people highlighted problems of web accessibility, audiovisual content of MOOCs, eContent, quality of sound and image, interactive services that makes the participation and communication of the participants/students with physical/functional disabilities. They also pointed out the problems/issues in using assistive technologies while navigating in the MOOC environment, in automated assessment and the process of engaging with fellow students through forum posts and collaborative group work. A large number of disabled students also concerned with use and accessibility of OERs because they are not familiar with the policies and rules of usability and accessibility. In conclusion all these studies It is recommended that designer, developers, administrators and instructors should consider problems and issues of people with disabilities while developing, conducting and assessment in MOOCs and OERs for maximum usability and accessibility.

Statement of the Problem

Open Education Resources and Massive Open Online Courses are relatively new phenomenon at the moment. Both OER and MOOCs are seen as recent new trends towards openness, accessibility and usability of knowledge through internet. All types of users like academicians, writers, creators, learners are accessing these resources with more open and easier way due to openness and free availability. The people with disabilities are always ignored or not considered for quality and free learning resources especially available at internet/online. The usability and accessibility are most common issues reported by people with disabilities. The current study was conducted to survey the issues and barriers related to OER and MOOCs.

Objectives of the Study

The objectives of the study were:

- To explore the issues and barriers in usability and accessibility of Open Education Resources by the people with disabilities.
- To find out the issues and barriers in usability and accessibility of Massive Open Online Courses by the people with disabilities.
- To collect the suggestions/recommendations of special need students studying in ODL system in usability and accessibility of OER and MOOCs.
- To give recommendations to instructional designers, developers, instructors and administrators to overcome or consider the usability and accessibility issues of people with disabilities.

Significance of the Study

People with disabilities are always neglected or not considered while devising new technologies, equipments and software. The current trends of “Open Educational Resources” and “Massive Open Online Courses” are digitized materials offered freely and openly for educators, students and self-learners to use and re-use for teaching, learning and research.” (Hylan, 2008).

The learners and teachers in open and distance learning faced number of issues and barriers but in recent trends of OER and MOOCs ‘learning Content, courseware, content modules, learning objects, collections and journals, tools, software, use, re-use and delivery of learning content including searching and organization of content, content and learning management systems, content development tools, and on-line learning communities are common issues. Implementation Resources: Intellectual property licenses to promote open publishing of materials, design principles of best practice, and localization of content are also reported barriers in OER and MOOCs.

The current study will help the instructional designers, online course developers, e-tutors, course developers and students with special needs themselves to design and develop more accessible and useable educational e-resources. The study will explore the areas related to issues of accessibility for compatible software and assistive technologies for the special need users. The internet providers, website designers, eContent developers and developers of multimedia support will benefits with the recommendations given by people with disabilities and researchers to design more accessible and usable eContent, software and assistive technologies that the special need users can use and access these recourses according to their special need. The study findings will be much helpful for the AIOU especially because they just start journey of development of OER and MOOCs and they will consider these issues while development.

Methodology

The study was descriptive in nature and survey method was used to collect the problems, issues and barriers related to usability and accessibility in MOOCs and OER. The survey method is most common method in descriptive researches for collection of respondents’ opinions, feedback and comments on issues and problems. As the study was unique in nature because the respondents were people with disabilities or special need students so mixed research method (qualitative and quantitative) was applied for questionnaire and interviews. The population of the study was special students studying in different programs of Allama Iqbal Open University, Islamabad. The sample of the study was 112 special need students (hearing impaired, visually impaired and physically disabled) studying in AIOU, Islamabad and 100% available population was the sample of the study. As the

study was unique in nature and first time conducted at AIOU so the respondents of the study were invited for one day orientation about OER and MOOCs. The concept of OER and MOOCs was discussed with the special need students and different sources were also shared with them. A simple five points Likert scale questionnaire consisted on 20 items was used to collect the issues and problems on usability and accessibility to OER and MOOCs. The questionnaire main areas were i) web accessibility, ii) audiovisual content or, eContent, iii) quality of sound and image, iv) interactive services that makes the participation and communication of the participants/students with physical/functional disabilities, v) assistive technology, vi) software, navigational problems, vii) automated system, viii) web 2.0, and legal aspects or copy rights. The researcher also interviewed the 25% of the sample for in-depth information on issues related to usability and accessibility to OER and MOOCs. The data collected through questionnaire and interview was analyzed by simple method of frequency and percentage with ranking of issues. Discourse analysis was done for interview data. A large number of disabled students were concerned with the policies and rules of usability and accessibility of OER and MOOCs because they were not well aware and familiar. It is recommended by the researcher that designer, developed, administrators and instructors should consider these problems and issues while developing, conducting and assessment in MOOCs and OERs for maximum usability and accessibility.

Results and Discussion

Quantities Data Analysis

The study was descriptive in nature and survey in design with mixed method of research. Total population was sample of the study. In sample there were 15 students with hearing impairment, 46 were visually impaired and 52 were physically or functional disabled. Questionnaire with 20 statements with option of five point Likert scale was responded by all the participants. Simple frequency and percentage statistics was applied to know about the level of problems and issues of usability and accessibility.

Table 1: Demands of Usability and Accessibility among People with Disabilities

N = 112

Demands	Average Score
Usability	2.35
Accessibility	2.16

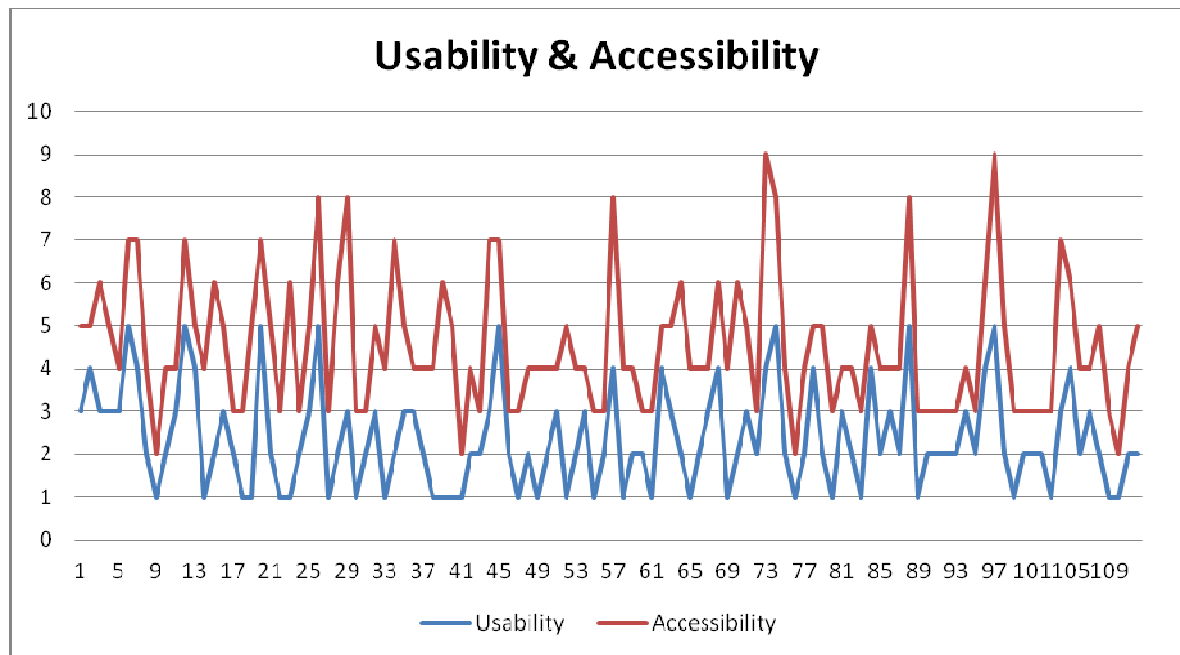


Table 1 depicts that both usability and accessibility demands are below the demands as the scale score 2 is least demands and 3 sometime. Both demands are above 02 but below 3 so we can conclude that demands of usability and accessibility have problems and issues.

Table 2: Demand of Usability among Students with Different Disabilities

N = 112

People with Disabilities (PWD)	Usability Average Score
Hearing Impaired (N=14)	2.01
Visually Impaired (46)	3.25
Physically/Functional Disabled (52)	3.85

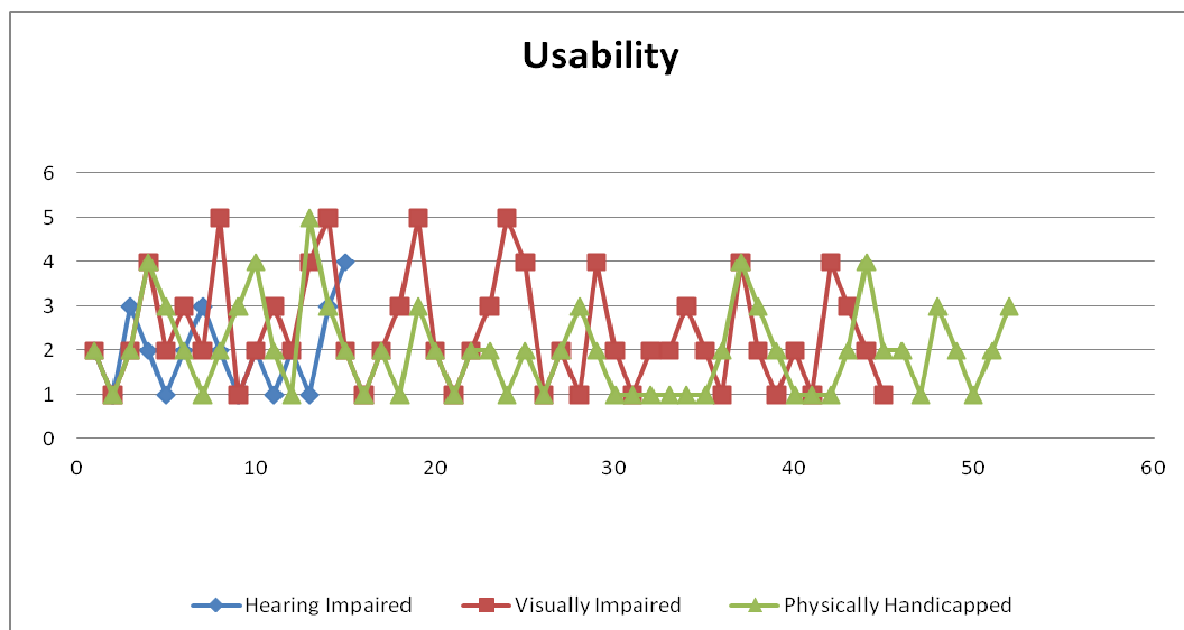


Table 2 revealed that demand of usability of OER and MOOCs among different disabilities is also below average score i.e. 3. But it is above average with physically handicapped and visually impaired students. It is less in hearing impaired students. We can conclude that hearing impaired students can't hear so they are not much interested in using OERs and MOOCs. But the interest of visually and physically disabled is very high because they are using these resources frequently and having feedback which motivated them for more and more use.

Table 3: Demand of Accessibility among Students with Different Disabilities

N = 112	
People with Disabilities (PWD)	Accessibility Average Score
Hearing Impaired (N=14)	1.43
Visually Impaired (46)	2.16
Physically/Functional Disabled (52)	2.88

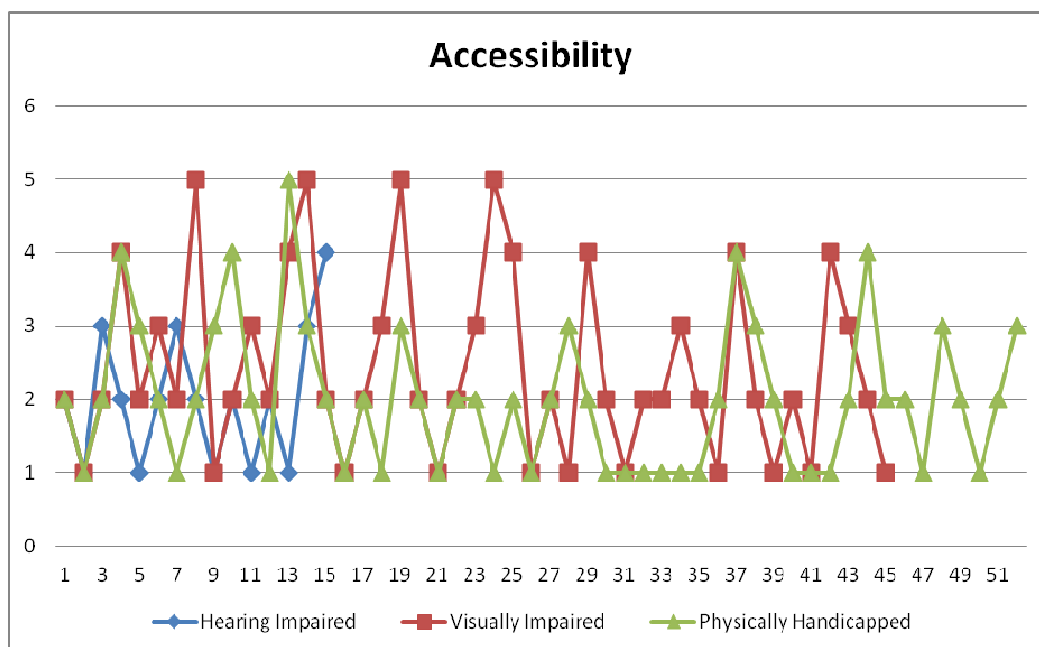


Table 3 reflects the demand of accessibility among students with different disabilities. Number of software and assistive technologies are helping to access these resources so it is high with physically handicapped and then in visually impaired students because they are mostly using JAZ software to access eContent at website and online courses.

Scale: 01--Not Usable or Accessible

02-- Least Usable and Accessible

03—Sometime Usable or Accessible

04-- Usable or Accessible

05—Usable or Accessible

Qualitative Data Analysis

Total 28 participants (hearing impaired 4, visually impaired 11 and physically disabled 13) were interviewed on issues and problems related to usability and accessibility. The information collected through interviews were analyzed and found acknowledgement of quantitative data. Most of the disabled people reported they can't access websites, material available there and files attached. The hearing impaired students were not able to use video clips lectures or discussions because there was no caption with voice. Physically disabled people were with issues of assistive technologies and visually impaired students can't access e-content due to non-supporting talking software with OER sites and MOOCs. They suggested that instructional designers and writers with software experts must plan together in consultation with people with disabilities.

Conclusions

OERs and MOOCs are most popular sources of information and knowledge. Hundreds and thousands of people benefited with these but more than 10% of total world population facing problems in usability and accessibility in OERs and MOOCs. In usability MOOCs are paradigms of the development of eLearning environments towards more a revolutionary computer and internet based scenario along with web 2.0 technologies that lead to the emergence of new kinds of learning resources and applications to enhance communication and collaboration processes not only for normal person but for disabled too. Though there are tremendous developments in eLearning or computer based learning through internet but still barriers and issues are present as reported in this study. There is lack of usability and accessibility among people with disabilities and they are not benefiting as others. These issues and barriers adding extra difficulties for special need students in ODL. This and such other studies highlighting number of areas need special attention of instructional designers and assistive technologists for future developments in OERs and MOOCs. Most of the respondents (visually and hearing impaired) reported web accessibility is main issue for them. The studies recommending Web Accessibility Initiative (WAI) from W3C can promote accessibility by means of guidelines related to the content (WCAG), the authoring tools (ATAG), and the user agents (UAAG). (Francisco, 2015) The study also concluded that most of the respondents (visually impaired) raised issue of multimedia formats based on audiovisual content with sound, images and interactive services for participation and communication are barriers for them. But on the other hand physically disabled people/students said it facilitated the accessibility to OERs and MOOCs.

The disabled or visually impaired students using assistive technologies faced problems of navigation especially in accessing the MOOCs. They also pointed out the issues of registration process in MOOCs and even using the e-content available at OERs. In MOOCs issues of automated assessment or e-assessment is another issue reported by visually impaired people with group activities or activities for engaging the learners with each other.

In terms of the interface elements, such as logging in, logging out, navigating in courses and content and communicating with all stakeholders, MOOC environments have - like other LCMS - multi-layered structures across which users with disabilities must be able to navigate. Moreover, this accessibility, if it exists, is aimed largely at the student, rather than the instructor or administrative roles. There seems to be a gap in the scientific analysis of how instructors using assistive technologies can use these systems also as learning creators. Francisco (2015) reported that in MOOCs Flash format is most frequently used to create the multimedia elements and in the study visually impaired/color blind/low vision people highlight it as major issue or problem while using or accessing such content/files. The expert recommended that instructional designers or multimedia experts may use Flash Player 6 compatible with MSAA for link between multimedia material and the support technologies. Also recommended applications of Windows-Eyes and JAWS to access material in OERs and MOOCs. The study finally recommends that team involved in development of OER and MOOC have orientation and information of special need of people with disabilities that while developing instructional material we can control/minimize or manage them accordingly.

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AN EMPIRICAL STUDY ON FACTORS INFLUENCING STUDENTS' INTENTION TO USE ONLINE LEARNING PLATFORM AMONG ONLINE LEARNING INSTITUTIONS IN MALAYSIA

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Abstract

The purpose of this study is to develop understanding on effect of perceived usefulness, perceived of use, reputation and trust on attitude and attitude on behavioral intention in students' intention to use online learning platform in Malaysia. The Structural Equation Model (SEM) used to analyze the casual relationships between independent variables and dependent variable. The model was developed and later tested by adopting the Partial Least Square (PLS) procedure on data collected from a survey that yielded 305 usable questionnaires. The findings showed that perceived usefulness, perceived of use and trust have significant and positive influence on attitude and attitude has significant and positive influence on intention in students' intention to use online learning platform in Malaysia. It is important to do the study utilizing experimental design by capturing longitudinal data in online learning platform using robust measures. The findings imply that the relationship of perceived usefulness, perceived of use and trust and attitude on intention will lead to more students to use online learning platform in their online study.

Introduction

From education perspective, many academicians define online learning as learning that to some extent occurs via internet. This includes providing course material and instruction interacting, communicating and assessment via online. (Cavanaugh, 2001; Maddux, Liu, Cummings, 2010). Many recent publication related to online learning are referred to course material delivered via internet (Malopinsky, Kirkley, Stein, & Duffy, 2000; Schank, 2001). Many universities depend on latest and sophisticated technology to introduce online courses. Today, higher education institutions realize the importance and significance of students satisfaction and learning outcome. Computer system and the networking have significant connection with the activity of learning even though both of it not necessary be the main factors of the activity or learning content provider. Schank (2001) suggests that students use computer networks in their learning activities as eLearning and emphasize that eLearning just distance learning. According to Maldonado, Khan, Moon, and Rho (2011), eLearning is the use of information and communication technology where education and training delivered. According to Jose (2010), online learning is very dynamic and is growing rapidly worldwide in education and training sector. Instructional tool based on the usage of internet and web technology deemed to be an optional education form that resolves present instructional problems and produces environment of creative and innovative learning. Online learning platform allows the lecturer to perform instructional delivery and communicate with students. Online learning platform, besides make available various instructional, it also provides huge flexibility for time and place of instruction. Therefore, online learning platform can better fit the requirements of students and lecturers who are located in different areas and have different schedules (Cavas et al., 2009; Dabaj, 2009). Although internet is gaining popularity as a medium to deliver learning material and to learn skills and knowledge, many people not really understand the system with regards to web-based instruction and the inability to form the underpinning theoretical backgrounds (Shih et al., 2012). The Internet and Web technologies with online learning combination has changed the spotlight from

lecturer-centered classroom to student-centered that allows the students with more command on course contents and the process of learning (Fotos & Browne, 2004). Therefore, it is very important to study and identify what are the factors that influence and develop the behavior of online learning students to successfully accept and adopt the online learning platform regardless of all the benefits and advantages of online learning platform. The aim of this paper is to demonstrate the link of perceived usefulness, perceived ease of use and reputation to attitude and the link between attitude and intention to use online learning platform in Malaysia and to test the conceptual research model that connect perceived usefulness, perceived ease of use and reputation to attitude and attitude to intention to use.

Literature Review

Underpinning Theory

Davis (1986, 1989, 1993) suggested the use of Technology Acceptance Model (TAM) to examine the technology impact on the behavior of the person. The focal point of the model is the process of technology usage that includes two main factors which are perceived usefulness and perceived ease of use that influence the intention in technology usage. Perceived Usefulness indicates that the person who use technology deem that this performance can get better with the existing of technology. Perceived Ease of Use signifies that user deems the technology usage is effort free (Davis, 1989). Venkatesh and Davis (1996) proposed that Perceived Usefulness and Perceived Ease of Use can be influenced by the external variables. Venkatesh (2001) studies concurred the hypotheses regarding positive relationships put forward in previously done research. From the beginning of TAM as suggested by Davis, some approached that aim on the technological acceptance degree referred to the model (Adams, Nelson, & Todd, 1992; Igbaria, Guimaraes, & Davis, 1995; Mathieson, 1991). Nevertheless, TAM only gives broad details if technology being adopted by people who want to use it. Additional details with regards to the usage in certain fields to allow technology development to be directed in the right way (Mathieson, 1991). Therefore, with regards to TAM and its modification and extension as to related literature, we come out with a conceptual model that enable to forecast students' intentions to use online learning platform.

Behavioral Intention

The main aim of this study is to examine the determinants of online students' behavioral intention in online learning environment. Ajzen suggested that intention is a barometer utilized to identify elements that affect a desired behavior. Additionally, Theory of Research Action (TRA) suggests that behavioral intention is the person's readiness cognitive representation to carry out a given behavior and deemed to be instant behavior antecedent. Behavior intention signify the amount effort that a person commitment to execute such behavior. Individuals assume their exact behavior implications prior to their decision to engage or not to engage in a certain behavior (Ajzen & Fishbein, 1980, p. 5). Greater commitment signifies the greater likeliness that the behavior to be performed. Theory of Reason Action proposes that individual behavioral intention rely on the attitude of the person with regards to behavior and Subjective Norms (Fishbein & Ajzen, 1975). There are many factors including Perceived Enjoyment (Wang, Lin, & Liao, 2010), Perceived Usefulness (Davis, 1989), Openness to Experience (Jacques, Garger, Brown, & Deale, 2009) and Subjective Norms (Schepers & Wetzel, 2007) that are positively connected with intention to use a technology (behavioral intention).

Perceived Usefulness

Perceived usefulness is known as a key driver of usage behavior and intention. Perceived usefulness refers to “the degree to which a person believes that using a particular system would enhance his or her performance” (Davis, 1989). In the technology acceptance model, perceived usefulness is an example of extrinsic motivation (Davis, Bagozzi, & Warshaw, 1992). Perceived usefulness is often cited as related to intention to use online learning platform. (Davis, 1989). For example, Letchumanan & Muniandy (2013) found that perceived usefulness form a positive attitude towards the use of e-book. Many others have reported the similar findings in English mobile learning (Chang, Yan & Tseng, 2012), collaborative learning by using Google Application (Cheung & Vogel, 2013) and MBA online course (Kibelloh & Bao, 2014). In summary, perceived usefulness has been found to be positively related to attitude to use online platform (Kucukusta, Law & Legohere, 2015 & Fagan, Kilmon & Pandey, 2012). Following these findings, we predict that:

H1: Perceived usefulness will be positively related to users’ attitude.

Perceived Ease of Use

Davis (1989) defines perceived ease of use as the degree to which a person believes that using a particular system would be free from effort. As such, an application perceived to be easier to use than another is more likely to be accepted by users. Previous studies have confirmed perceived ease of use is also an important factor in student’s behavioral intention to use online learning platform (Christensen, Anekwe & Kessler, 2001; Islam & Zabeed, 2011; Chang, Yan & Tseng, 2012; Letchumanan & Muniandy, 2013; Nasser, 2014; Cheung & Vogel, 2013). The factor is based on the users’ familiarity in using the technology. Technology has been widely used and become a mediator in obtaining the required information. According to Cheng and Chen (2011), perceived ease of use is a dominant factor that motivates the users’ attitude. Users’ prefer to use the online learning because it is effortless but they still can increase their knowledge and the performance. It is thus hypothesized that:

H2: Perceived ease of use will be positively related to users’ attitude

Reputation

Reputation also known as extrinsic benefit can help an individual to obtain and maintain his or her status in a community (Jones et al. 1997; Marett & Joshi 2009). For example, reputation can make the individual being portray as a knowledgeable person with valuable expertise (Davenport & Prusak 1998) and they will lost their reputation if the community deems the shared content unreliable (Chang & Chuang 2011). Previous research has indicated that building a reputation is a strong motivator for knowledge sharing (Davenport & Prusak 1998; Wasko & Faraj 2005). According to O’Neill, Singh & O’Donoghue (2004), quality assurance of the information and the extension of institution brand becomes the determinant of online learning platform reputation. In addition, Josang, Ismail and Boyd (2007) describe the reputation system serves as a kind of social network. Trusted website will attract more people and will influence the users’ attitude. Higher rating will be given to the preferred online platform. Mishra & Panda (2007) confirmed that the high quality of the content can influence the attitude of the users in using the online learning platform. It is significant with O’Neill et. al. (2004) which describes reputation is about the quality. Thus, it is hypothesized that:

H3: Reputation will be positively related to users’ attitude.

Trust

Trust can be defined as a belief with regards to confidence, dependability and reliability towards a person (Everard & Galletta, 2006; Fogg & Tseng, 1999; Gefen et al., 2003). Li, Zhang, & Shim, (2010), suggested trust is the view that the simulation provider reliability that consist exact beliefs with regards to integrity, competence and benevolence. Hernandez-Ortega, 2011 proposed that technology trust rely largely on technology reliability with right function. It is very vital to decide and to adopt technology that generally used as it minimizes the uncertainty and risk deemed in the initial adoption stages (Hernandez-Ortega, 2011; Pavlou & Gefen, 2004). Even though trust with different connotations being investigated many fields of disciplinary such as marketing, management and philosophy (Wang & Emurian, 2005), there is a clear literature shortage on examining trust in e-learning perspective or comprehending the factors that determine it. Most of the researched that being done offer theories and models for developing trust in the area of electronic commerce and aim how to maximize shopping via internet (Cheung & Lee, 2006; Ha & Stoel, 2009; Jarvenpaa et al., 2000). Lately, many studies between trust and e-learning have surfaced. However, the the aim of the study bound to either trust of students and view with regards to information security and e-learning systems (Hashem, 2011; Liu & Wu, 2010) or the task played by trust in upholding online collaboration and team (Al-Ani et al., 2013; Casaló et al., 2008). In view of that, there is an urgent need to fully understand the determinants of student trust with regards to e-learning. Failure with, it will be complicated to develop and manage trust of student in online environment. Thus, it is hypothesized that:

H4: Trust will be positively related to users' attitude.

Attitude

Allport (1935) defined an attitude as "a mental and neural state of readiness, organized through experience, exerting a directive and dynamic influence upon the individual's response to all objects and situations with which it is related" (p. 810). While Krech and Crutchfield (1948) says, "An attitude can be defined as an enduring organization of motivational, emotional, perceptual, and cognitive processes with respect to some aspect of the individual's world" (p. 152). These definitions emphasized the enduring nature of attitudes and their close relationship to individuals' behavior. Other sociologists (e.g., Fuson, 1942) and psychologists (e.g., Campbell, 1950) defined attitudes simply in terms of the probability that a person will show a specified behavior in a specified situation. Davis (1989) describes the determinants of attitude can influence the users' behavioral intention in online learning. The determinants include perceived usefulness, perceived ease of use, reputation and trust. According to Shen & Chiou, (2009), attitude correlates directly towards the intention. Users' will have the intentions in using the blogging community based on the positive behaviors towards it. The claim is consistent with the empirically validated previous studies that show the positive relationship between attitude and the users' intention (Cheung & Vogel, 2013; Chang, Yan & Tseng, 2012; Cheng & Chen, 2011; Kim, Kim, Im, & Shin, 2003). Following these findings, in this study, we assume the students' attitude will be positively related to behavior intention in using online learning platform. Thus, it is hypothesized that:

H5: Attitude will be positively related to the users' behavior intention

Methodology

There are 15 observed variables that form the measurement of exogenous The variable of perceived usefulness (5 items), perceived ease-of-use (4 items), reputation (3 items) and trust (3 items). The mediating variable of attitude consists of 5 items and the endogenous variable consists of 5 items. The 5-point Likert scale of 1-strongly disagree, 2-disagree, 3-neutral, 4-agree and 5-strongly agree. Questions of demographic variable are gender, age, marital status, race, occupation, income, and current level of study. Local students who are currently study via distance learning were the main

respondent of this study. All together, a total of 450 distance learning students were requested to answer the questionnaires that have the construct measures. All respondents were from Klang Valley and answered the questionnaires which were distributed via email and on the spot. The sampling technique adopted in this study was convenient sampling. Out of 450 questionnaires given out, 369 were returned back. This constitutes the response rate of 73.1% and is adequate to perform Structural Equation Modeling (SEM) analysis. To identify the multivariate outliers, the Mahalanobis distance was adopted. The $p < 0.01$ and critical value of $\chi^2 = 84.40$ was applied and successfully identify 64 cases with Mahalanobis value above 84.40 and were permanently deleted. Only 305 datasets are available and can be further analyzed.

Results

Model Measurement

SmartPLS was adopted to assess adequacy of measurement model and test the four hypotheses. Partial Least Square (PLS) focuses on the explanation of variance using suitable technique of ordinal least square for relationship such as stated in this research (Gudergan et al., 2008). Sufficiency and reflective outer measurement model significance for the other variables were assessed by an indices test range including of each one of indicator weights and loadings average variance explained (AVE), composite reliability, bootstrap t-statistic (critical ratio), convergent validity and discriminant validity. Further, the reflective outer-measurement model significance was assessed by computing t-values bootstrapped critical ratio. As shown in Table 1, models of reflective outer measurement demonstrated satisfactory bootstrap critical ratios complying with the 1.96 recommended benchmarks.

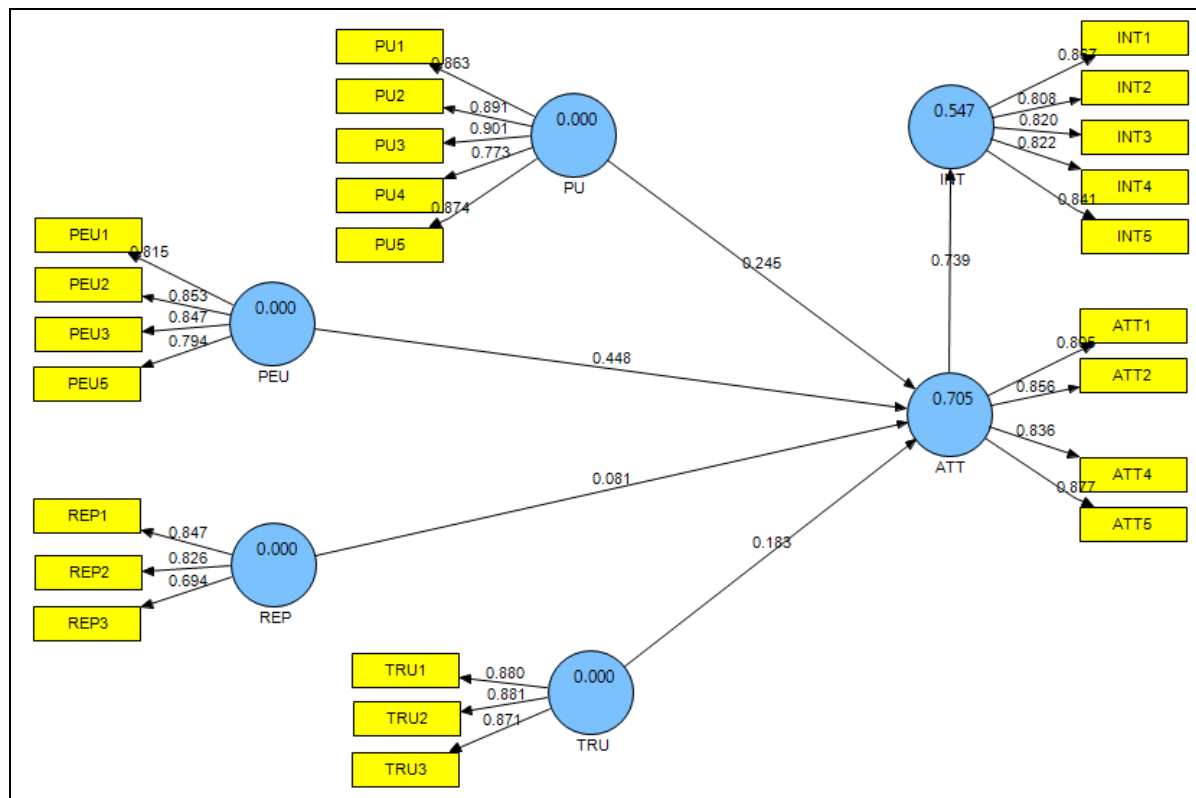


Figure 1: Research Framework

Table 1: Outer Measurement Model

Construct	AVE	Reliability	Loading	T-Value
Perceived Usefulness	0.743	0.913		
PU1			0.863	24.498
PU2			0.891	38.208
PU3			0.901	45.168
PU4			0.773	14.923
PU5			0.874	26.599
Perceived Ease of Use	0.685	0.847		
PEU1			0.813	19.788
PEU2			0.853	23.031
PEU3			0.847	22.397
PEU5			0.794	15.622
Reputation	0.627	0.707		
REP1			0.847	22.341
REP2			0.826	22.078
REP3			0.694	8.150
Trust	0.769	0.850		
TRU1			0.880	32.311
TRU2			0.881	27.096
TRU3			0.871	27.654
Attitude	0.713	0.865		
ATT1			0.806	13.280
ATT2			0.856	20.497
ATT4			0.836	18.768
ATT5			0.877	27.307
Intention	0.692	0.889		
INT1			0.867	28.180
INT2			0.808	17.698
INT3			0.820	17.043
INT4			0.822	18.414
INT5			0.841	22.162

Convergent Validity

The outer-measurement models sufficiency of convergent validity was assessed by calculating composite reliability (Hulland, 1999). The results convergent validity analysis validate that the models of outer measurement and their first order factors are coincide with Nunnally's (1978) 0.70 reliability criteria. Table 2 shown all constructs composite reliability range from 0.834 to 0.935. Therefore, the constructs connected with outer-measurement models demonstrated adequate convergent validity

Table 2: Construct Validity & Reliability

	AVE	AVE sqr	Composite	R Square	Alpha	Communality
ATT	0.713	0.844	0.908	0.705	0.865	0.713
INT	0.692	0.832	0.918	0.547	0.889	0.692
PEU	0.685	0.828	0.897	0.000	0.847	0.685
PU	0.743	0.862	0.935	0.000	0.913	0.743
REP	0.627	0.792	0.834	0.000	0.707	0.627
TRU	0.769	0.877	0.909	0.000	0.850	0.769

Discriminant Validity

Discriminant validity indicates how fit each of the item factor attaches to its respective construct than others. Discriminant validity is estimated by observing the cross loadings and the association among first-order constructs and the AVE square roots (Chin, 1998; Fornell and Bookstein, 1982). Demonstrated cross-loadings in Table 3 show sufficient discriminant validity levels for individual construct. Every item factor in the bold value of Table 3 shows high values of loading to the corresponding latent construct and low loading values to other constructs. The association between AVE square roots values and the correlations among first-order latent constructs hold the same conclusion. In Table 4, it is a clear indication that the AVE square roots (bold numbers in diagonal) are greater than the correlations among the constructs (off-diagonal values).

Table 3: Cross Loading

		INT	PEU	PU		TRU
ATT1	0.805	0.593	0.686	0.568	0.475	0.595
ATT2	0.856	0.647	0.673	0.600	0.472	0.601
ATT4	0.836	0.619	0.615	0.635	0.530	0.564
ATT5	0.878	0.637	0.666	0.638	0.548	0.620
INT1	0.698	0.867	0.659	0.528	0.443	0.513
INT2	0.578	0.808	0.592	0.450	0.394	0.535
INT3	0.551	0.820	0.577	0.471	0.413	0.495
INT4	0.598	0.822	0.648	0.497	0.418	0.424
INT5	0.634	0.841	0.637	0.549	0.449	0.491
PEU1	0.600	0.609	0.815	0.535	0.458	0.532
PEU2	0.704	0.623	0.853	0.600	0.511	0.557
PEU3	0.654	0.640	0.847	0.566	0.544	0.573
PEU5	0.621	0.612	0.795	0.497	0.402	0.570
PU1	0.662	0.525	0.615	0.863	0.564	0.651
PU2	0.635	0.530	0.570	0.891	0.514	0.602
PU3	0.679	0.525	0.600	0.901	0.534	0.622
PU4	0.515	0.506	0.530	0.773	0.519	0.579
PU5	0.606	0.508	0.551	0.874	0.552	0.595
REP1	0.482	0.420	0.508	0.477	0.847	0.526
REP2	0.561	0.453	0.474	0.550	0.826	0.449
REP3	0.347	0.319	0.388	0.440	0.694	0.415
TRU1	0.639	0.545	0.615	0.642	0.496	0.880
TRU2	0.601	0.535	0.577	0.625	0.506	0.881
TRU3	0.615	0.473	0.580	0.595	0.535	0.871

Table 4: Correlations & AVE Square Root

	ATT	INT	PEU	PU	REP	TRU
ATT	0.844					
INT	0.739	0.832				
PEU	0.782	0.750	0.828			
PU	0.723	0.601	0.666	0.862		
REP	0.600	0.510	0.580	0.621	0.792	
TRU	0.705	0.590	0.674	0.708	0.584	0.877

Hypotheses Testing and Results

H_1 states that perceived usefulness is predicted to have positive influence on attitude. Table 5 results confirmed this hypothesis with path coefficient of 0.245 and t-value of 2.406. In H_2 , attitude is predicted to be positively influenced by perceived ease-of-use and the results in Table 5 supported H_2 with the path coefficient of 0.448 and the t-value of 4.994. In H_3 , attitude is predicted to be positively influenced by reputation and results in Table 5 does not support H_3 with the path coefficient of 0.081 and the t-value of 1.03. H_4 states that trust predicted to have positive influence on attitude. Table 5 results confirmed this hypothesis with path coefficient of 0.183 and t-value of 1.986. Lastly, in H_5 , behavior intention is predicted to be positively influenced by attitude and results in Table 5 supported H_5 with the path coefficient of 0.739 and the t-value of 13.948.

Table 5: Path Coefficient & T-Value

Path	Beta	T-value
PU--->ATT	0.245	2.406
PEU--->ATT	0.448	4.994
REP--->ATT	0.081	1.03
TRU--->ATT	0.183	1.986
ATT--->INT	0.739	13.948

Table 6: Hypotheses Results

Hypothesizes Relationship	Path Coefficient	T-Value	Conclusion
H_1 : Perceived usefulness has positive and significant influence on attitude	0.245	2.406	Supported
H_2 : Perceived ease of use has positive and significant influence on attitude	0.448	4.994	Supported
H_3 : Reputation has positive and significant influence on attitude	0.081	1.03	Not Supported
H_4 : Trust has positive and significant influence on attitude	0.183	1.986	Supported
H_5 : Attitude has positive and significant influence on Behavioral Intention	0.739	13.948	Supported

The measurement of goodness-of-fit index (GoF) was also computed as proposed by Amato et al.(2004) to evaluate the models of outer-measurement and inner-structural fit simultaneously to the data. The function of GOF is a universal fit index for the authentication of PLS model. The GoF is calculated by getting the square root of the average communality product of all constructs and the average R^2 value of endogenous constructs as:

$$\text{GoF} = \sqrt{\text{Communality}_{\text{avg}} \times R^2_{\text{avg}}}$$

Based on the R^2 effect sizes classification by Cohen (1998) and adopting the of 0.5 cut-off value for commonality (Fornell & Larcker, 1981), GoF criteria for small, medium, and large effect sizes are 0.1, 0.25 and 0.36 respectively. The calculated GoF for model was 0.383 telling that good fit to the data.

Discussion & Conclusion

This main objective of this study is to establish the understanding of the direct effect of perceived usefulness on attitude, perceived ease of use on attitude, reputation on attitude, trust on attitude and attitude on behavioral intention relationship in Malaysia online learning platform. This research is to establish the likely causal relationship among the constructs which are perceived usefulness, perceived ease of use, reputation, trust attitude and behavioral intention. In relation to this, the previous study review in the field of perceived usefulness, perceived ease of use, reputation, trust attitude and behavioral intention was done. From the initial findings of academic studies, the model was developed and it's shown that perceived usefulness, perceived ease of use, reputation, trust have a positive and significant direct effect on attitude and attitude has a positive and significant direct effect on behavioral intention. The empirical testing was done since it is difficult to justify any model superiority theoretically. This study proposed model to empirically tested and verified that are positive direct relationship among perceived usefulness, perceived ease of use, reputation, trust on attitude and attitude on behavioral intention. To analyze the data, PLS technique was utilized to accomplish this objective. Firstly, the widely accepted relationship between perceived usefulness and attitude is established. The direct relationship between the perceived usefulness and attitude path coefficient is 0.245 and the critical ratio t-value is 2.406 which show significant level. After that, the relationship between perceived ease of use and attitude was tested and it is found that the path coefficient is 0.448 and the critical ratio t-value is 4.994 which is significant. Then, relationship between reputation and attitude was verified. The direct relationship between the reputation and attitude path coefficient is 0.081 and the critical ratio t-value is 1.030 which is not significant and therefore not supported. After that, the relationship between trust and attitude was tested and it is found that the path coefficient is 0.183 and the critical ratio t-value is 1.986 which is significant. Finally, the relationship between attitude and behavioral intention was tested and it is found that the path coefficient is 0.739 and the critical ratio t-value is 13.948 which is significant. With regard to the above, it is concluded that perceived usefulness, perceived ease of use and trust have positive and significant influence on attitude and attitude has positive and significant influence on intention in Malaysia online learning platform. These study findings suggested that Intention to use online learning platform among students can be strengthened and enhanced by giving emphasis on the factors that can further increase perceived usefulness, perceived ease of use and trust which will form the positive attitude and eventually will increase the intention of the students to use online learning platform. On the other hand, online learning institution can reinforce and enhance the students' intention to use online learning platform by improving the perceived usefulness, perceived ease of use and trust level.

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EVALUATION OF A TECHNO-PEDAGOGY APPROACH: A LEARNING DESIGN STUDIO

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Abstract

A learning design studio approach was the focus of one of the learning blocks for the module H817, Openness and innovation in e-learning leading to the Masters of Arts in Online and Distance Education (MAODE) by Open University, UK. The learning design studio is structured using digital storytelling to explore social/cultural or ethical dilemmas. Students were required to choose either a professional domain or school subject where learners need to develop their awareness of social, cultural or ethical issues and make informed and considered judgements. The consideration was the effectiveness of digital storytelling as an effective educational tool. The learning design studio affords learners the opportunity to conduct a modest design experiment by a) describing a particular context b) reviewing theories and case studies to propose a possible way of addressing a challenge c) prototyping and defining an evaluation scheme for the innovation proposed and d) working in a team and interacting with other teams, by providing feedback on their work and receiving feedback (Mor and Clarke, 2015). However, the focus of this paper will be an evaluation of the techno-pedagogical approach illustrated by one group of learners that derived the challenge of creating a one week induction programme to new international students by the use of digital storytelling with the creation of personas, supported by theoretical frameworks and design principles as representations. The learning design studio was conducted over a period of 8 weeks consisting of 19 learning activities from the initiation of grouping learners randomly assigned by the tutor.

Keywords: Learning Design Studio, Digital Storytelling, MAODE, techno-pedagogy, Design Principles

Introduction

This paper traces and describes a learning design studio approach as the focus of one of the learning blocks for the module H817, Openness and innovation in e-learning leading to the Masters of Arts in Online and Distance Education (MAODE) by Open University, UK. The module H817, Openness and innovation in e-learning was conducted for a period of 6 months from 7 February- 7 September, 2015 consisting of 4 learning blocks. This learning block (i.e. Block 3) was conducted for a period of 8 intensive weeks consisting of 19 activities (tasks) to be completed. Initially, students were democratically given a selection of project themes such as either a game to teach a particular subject in mathematics, exploring history using mobile and/or social technology, an assessment of multimedia artefacts in a design-based course, using digital diaries to support reflective practice in professional development or using digital story telling to explore social/cultural/ ethical dilemmas . These were a few of the themes that students had options to base their team project learning studios on. The wide range of themes catered for students who were from diverse educational and professional backgrounds with different nationalities. Students were allowed to choose only one option. Since this is a group project, students were randomly assigned by the tutor into groups of 5-7 members per group.

Objective of the Learning Studio

From the overwhelmingly student responses, the last option was chosen so the learning design studio is structured using digital storytelling to explore social/cultural or ethical dilemmas. Furthermore, students were required to choose either a professional domain or school subject where learners need to develop their awareness of social, cultural or ethical issues and make informed and considered judgements. The consideration was the effectiveness of digital storytelling as an effective educational tool. The main objectives of the learning design studio affords learners the opportunity to conduct a

modest design experiment by a) describing a particular context b) reviewing theories and case studies to propose a possible way of addressing a challenge c) prototyping and defining an evaluation scheme for the innovation proposed and d) working in a team and interacting with other teams, by providing feedback on their work and receiving feedback (Mor and Clarke, 2014). Most importantly, the philosophy of learning by doing is emphasized. Working in a team is an important element in the learning design studio project. Working in teams means that students need to collaborate closely with each other and team members need to plan and schedule their availability. The benefits of collaborative learning are constructed knowledge through interleaved action and discussions (Mor and Clarke, 2014). Besides, Sales et. al., as cited in Mor and Clarke, 2014, identifies the ‘big 5’ elements of team work of team leadership, mutual performance monitoring, back-up behaviour, adaptability and lastly, team orientation. These in turn are supported by three coordinating mechanisms which are: shared mental models, mutual trust and closed looped communication (Kay et.al., as cited in Mor and Clarke, 2014).

A Techno-pedagogy Approach: Learning Design Studio

A group website was set up to allow for a platform for group members to collaborate. Each group member was requested to do individual research, collaborate on a group project and exchange feedback with peers. For this purpose, in this learning block, OU Google Apps was used. Groups then had to create their own website. By the use of Google Doc’s, a very powerful collaborative tool that among other features; allows for multiple authors to simultaneously edit a document, supports commenting text and live chat, and keeps detailed account of all changes made (Mor and Clarke, 2014). In order to use the OU Google Apps, a user is required to set up an Open University account in which a site template has been created for this task. A guide for the OU Google Apps tool can be consulted if students face any difficulties in using any of the tools that are referred for this task. The next section will trace one group of learners (Team-bgjpz). This team derived the challenge of creating an induction program to new international students by the use of digital storytelling as the major theme for their learning design project.

This task started with the first activity of role allocation to be considered among the team members such as the team leader who is a person who will schedule and chair team discussions, proposes a division of tasks among team members and resolves tensions within the team. The students were randomly selected in a group

Describing a Context (the Where and What): A Learning Design Initiative

Ideally, to instigate a learning design initiative, there needs to be careful documenting and analyzing of data such as data from field notes from ethnographic observations, sketches, images and videos of student’s learning environments, recordings, transcripts, screenshots of digital artifacts and tools, demographic data and survey data. Therefore, this data then could be used to construct representations of the context. These representations would help refine and elaborate on the challenge (Mor and Clarke, 2014). However, for the 8 week period of this learning block, the scope and circumstances of this project does not allow for an extensive exploration. Indeed, it can be argued that in real-life design projects rarely have the opportunity to follow such a complete path of inquiry. Instead, designers rely on their tacit knowledge of the target audience and innovation context (Mor and Clarke, 2014). To instigate a particular context for the learning design studio to take place, the team (let’s say Team -bgjpz) by using online forums came together to discuss ideas and come to a consensus on creating the challenge as shown in screenshot in Figure 1 below:

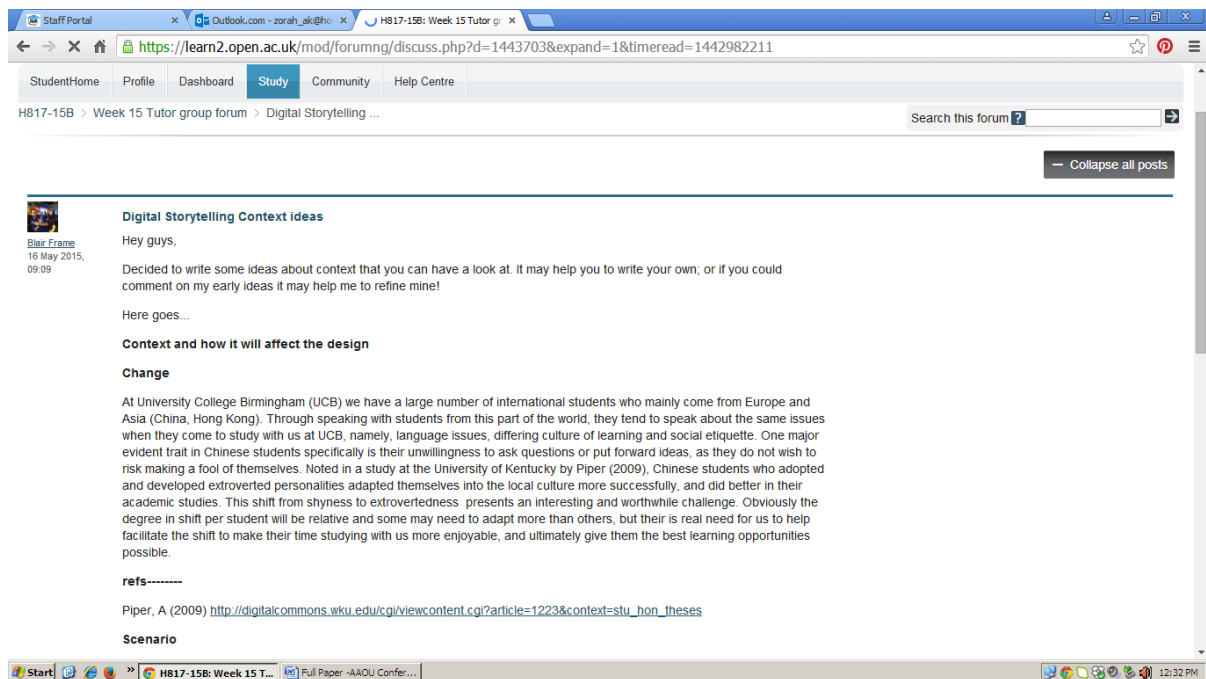


Figure 1: An example of an online forum posting

The challenge created describes a context in which an induction program needs to be created for new international students for University College Birmingham to adjust to student and social life in the UK. By using Google Doc's, the group was able to describe the challenge and the context as illustrated by the screen shot in Figure 2 below:

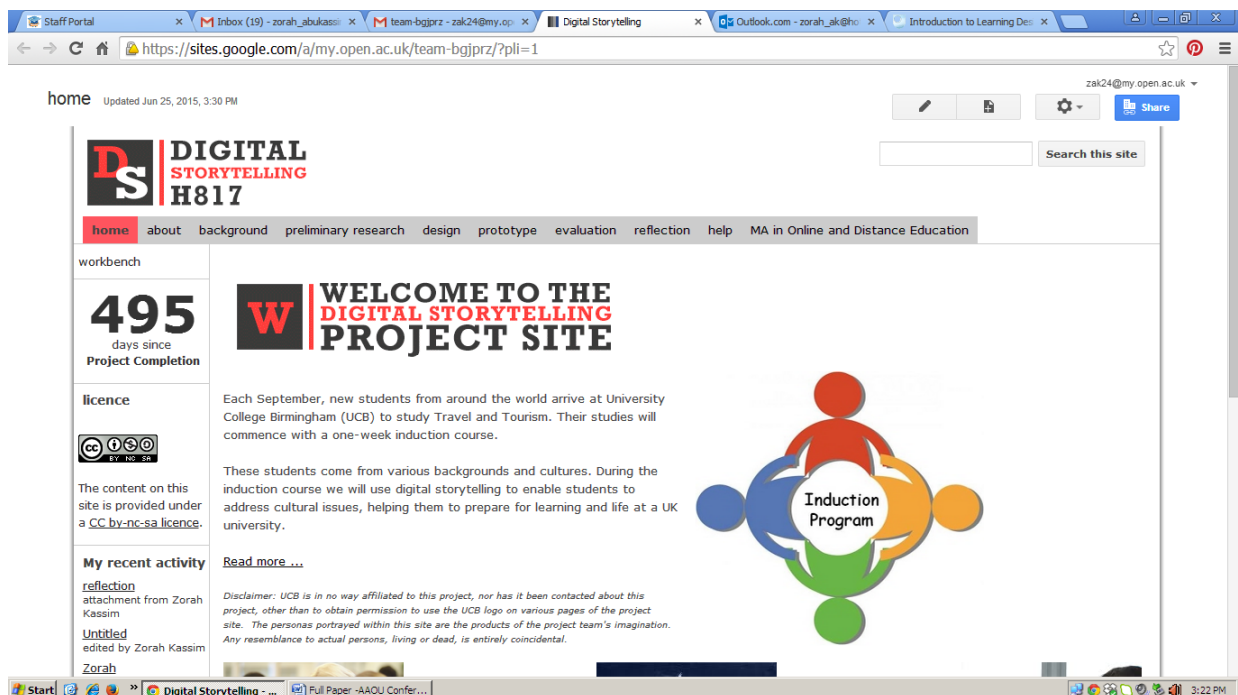


Figure 2: Screenshot of Google Doc: Description of a Context

The title of the Learning Studio is ‘Digital Storytelling- H817. The context was further described in Figure 3 as shown below:

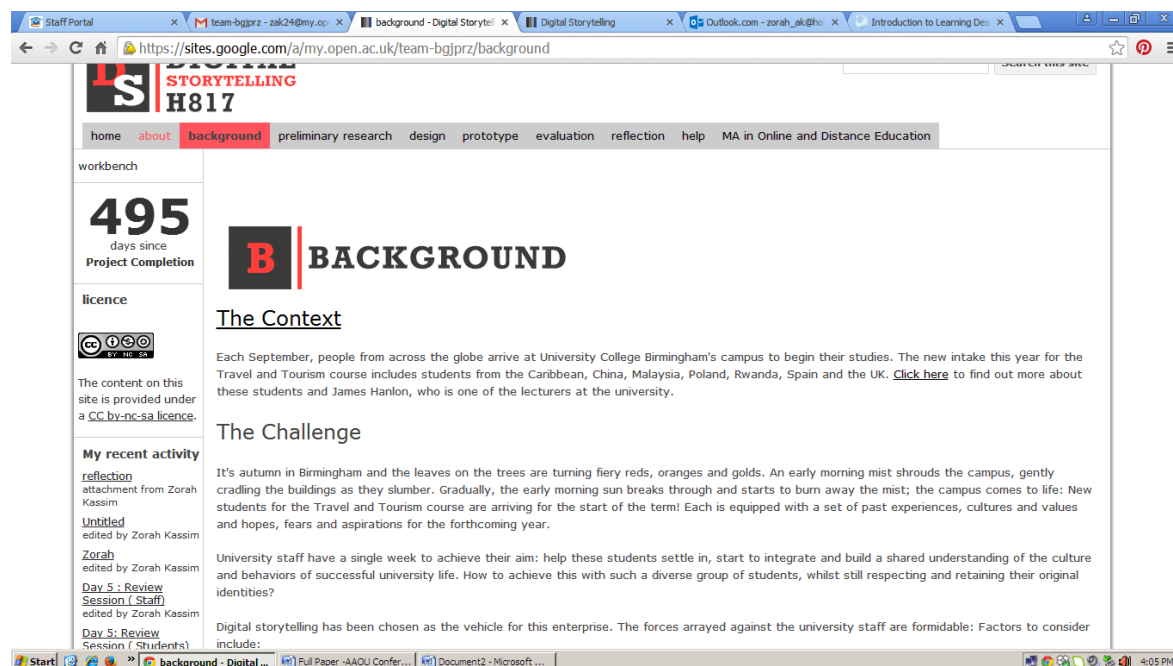


Figure 3: Screenshot of Google Doc: Description of the challenge

The creation of the challenge was focused on introducing and implementing an induction program to new international students arriving in September for every academic year at University College Birmingham. The induction program consists of requesting students to narrate their stories in any digital form. The main characteristics of the learning design project are designing and implementing an induction program for new students for 5 days. The main aim of the induction program is to enable international students to adjust and be prepared for a social and student life in the UK but still retain their cultural identities. The focus was on new Travel and Tourism undergraduate students from countries in the Caribbean, Malaysia, Poland, Rwanda and Spain. Furthermore, the induction program required that students create their own digital stories. These stories need to depict they had in the UK (for example, going to the pub) and another scenario depicting any academic encounter they had in the UK (for example, going to the University library). The other characteristic of this learning design project was the involvement of staff of the university and previous international students (aptly named as student ambassadors) to be conducting and assisting in the implementation of the program. The rationale behind enlisting previous international students is that they are emphatic to new students and their experiences could help new students through the social scenarios and in facilitating better cohesion among members of student groups.

Creating Persona's: A Design Tool

The creation of personas is to have a model of the actors playing a role in the innovation. One popular way of representing such models, adapted from software development, is called ‘personas’. Wikipedia (2012) defines personas as fictional characters created to represent the different user types within a targeted demographic, attitude and/or behavior set that might use a site, brand or product in a similar way. Cooper (1999) provides some guidelines for authoring personas are summarized as below:

- Be specific – the more specific, the persona's, the more effective as design tools.
- Giving the persona a name- is one of the most important parts of successfully defining one. A persona without a name is simply not useful. Without a name, a persona will never be a concrete individual in anybody's eyes. To put faces to a names and give each persona an images

- Precision not accuracy- as a design tool, it is more important that a persona be precise than accurate. That is, it is more important to define the persona in great and specific detail than that the persona be precisely a correct one.

Templates were provided in which a persona card was created by either a Google Template or a Word Template. In the Google Doc, an example of a persona for Team-bgjprz was created as shown below:

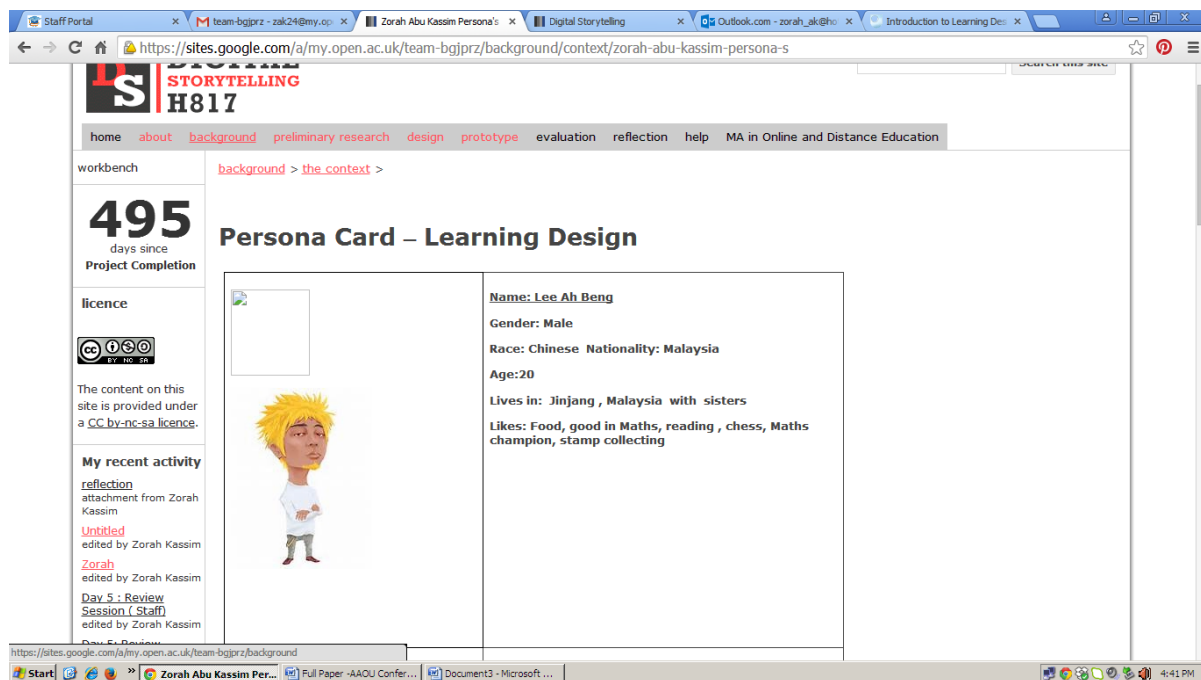


Figure 4: Screenshot of an example of a Persona – Lee Ah Beng

These personas as an example (see Figure above), were used by this Team-bgjprz to illustrate the types of students that were the target audience. Now, the team had to use past experiences of others derived from literature such as case studies or theoretical frameworks. The rationale for using past experiences of others are to avoid reinventing wheels and repeating mistakes. In other words, learning from relevant examples of past innovations and apply aggregated knowledge encapsulated in theoretical frameworks (Mor and Clarke, 2014). Team A's members were required to conduct a literature review from past studies in either case studies or theoretical frameworks that gave structure to the innovation. The purpose of the use of a theoretical framework is to guide and direct the design. A chosen theoretical framework was chosen and illustrated in a screenshot as shown below:

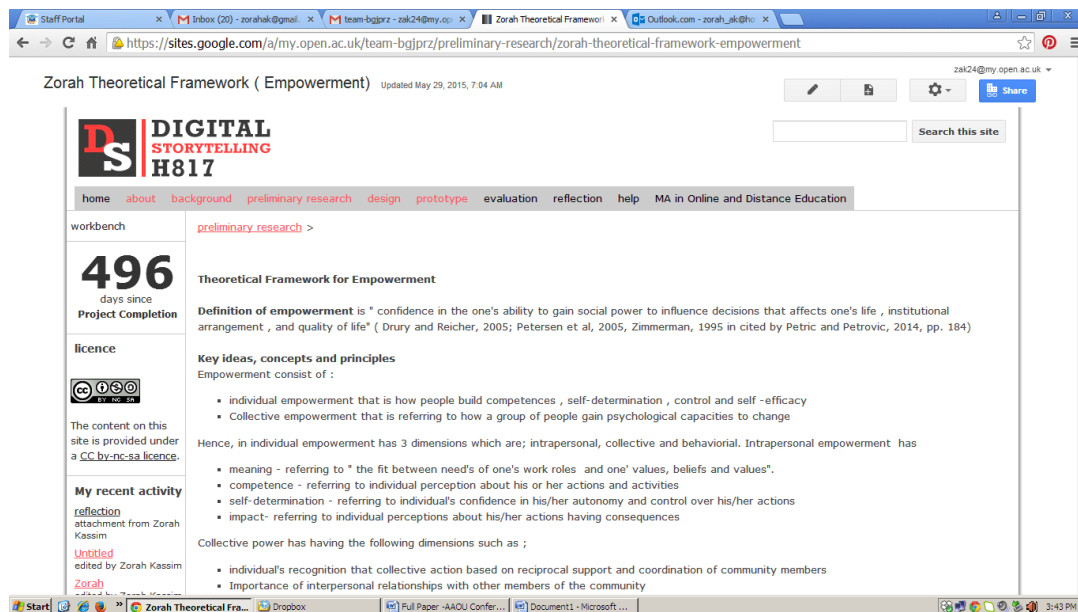


Figure 5: An example of Team A's chosen Theoretical Framework: Empowerment

Identifying Design Principles

Choosing a theoretical framework gave Team -bgjprz a sense of what to aim for. Hence, there was a need to formulate insights into 'building blocks' for design. One way of capturing compact blocks of design knowledge is design patterns (Goodyear, 2005; Mor and Winters. 2007). Kali (2006) describes design principles as 'an intermediate step between scientific findings, which must be generalized and replicable, and local experiences or examples come into practice. Because of the need to interpret design principles, they are not readily falsifiable as scientific laws. The principles are generated inductively from prior success and are subject to refinement over time as others try to adapt them to their own experiences. In this sense, they are falsifiable, if they do not yield purchase in the design process, they will be debated, altered and eventually dropped'. Team-bgjprz produced a number of design principles and one example is illustrated in Figure 6 as shown in the screenshot below:

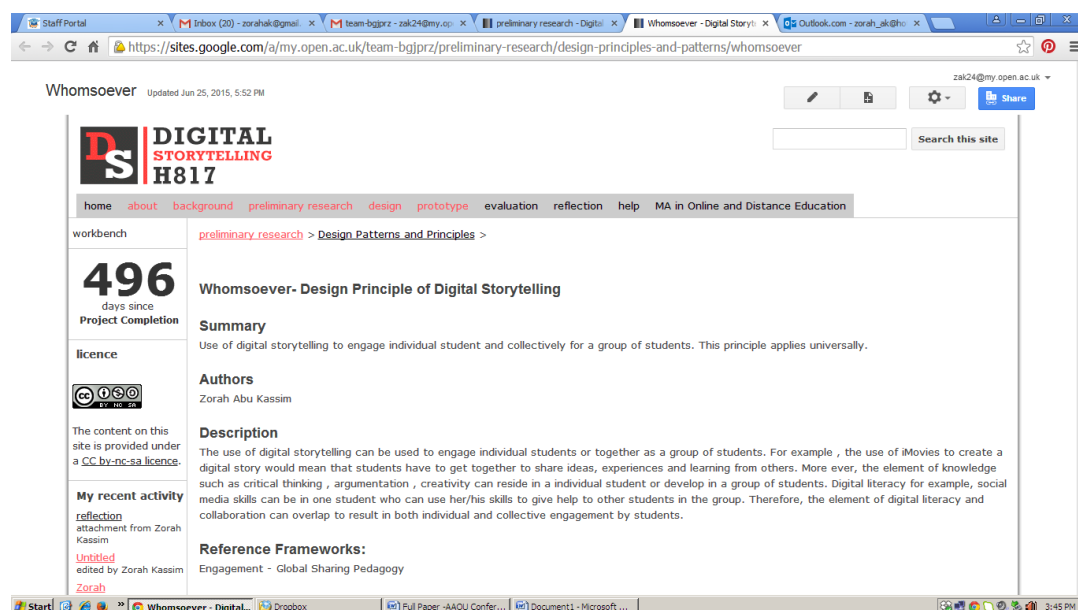


Figure 6: An example of Design Principles: Whomsoever

Outcomes of Learning Design Studio

There were a number of desired outcomes for an effective induction program to be conducted by staff and student ambassadors. The results lead to several artifacts such as:

- Creation of digital packs for students consisting of a course booklet, time table of activities on a day-today basis scheduled for the week, a guide on blogging, examples of scenarios, availability of potential tools and technologies they could use (Prezi, Google+, Microsoft Word point, a step by step guide on how to create digital stories and an online evaluation form on the induction programme
- Digital packs for staff and student ambassadors consist of a 2 day workshop including timetabling of activities for 2 days and a hands-on session, a staff manual that includes a step by step guide on how to create digital stories, access to student's digital packs through VLE and an online evaluation form.

Certifications were awarded to students who have completed the 5 day induction program as tangible rewards. Students were requested to blog at the start of the induction program on their experiences. Badges were awarded to students who had blogged of their experiences on the induction program. The blogs later would be used as evaluation tools to assess the effectiveness of the program.

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“BIRDS OF A FEATHER FLOCK TOGETHER”: COLLABORATION IN FULLY ONLINE LEARNING

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Abstract

Online learning has been implemented in Malaysia for several decades to widen the access to education while improving the quality of learners learning experience. However, a study on collaborative learning among learners in fully online programmes in Malaysia is infrequent. Based on this, the paper focuses on a fully online programme in one Open Distance Learning (ODL) university in Malaysia to ascertain learners learning experience and further, to understand whether collaborative learning affect the learners' behaviour towards the fully online programme. Working adults enrolled for the fully online Bachelor of Tourism Management with Honours programme were interviewed. A semi-structured face-to-face interview was used in data collection in order to gain richer insights about their experiences and evaluates on the practicality of the fully online programme. Findings indicated that the learners were colleagues from same organisations in which it establishes a group support organically and motivates them to complete the programme. Furthermore, peers influence the learners' enrollment into the programme and the online delivery method equips them with competent knowledge. However, quantitative subjects in a fully online delivery remain a challenge for students. These findings will contribute to effective marketing strategy and the delivery of courses online.

Keyword: Collaborative learning, group, fully online, learning experience

1.0 Introduction

There has been a steady growth in Malaysia tourism industry with a record increase in annual receipts of tourist spending recorded in spite of the challenges faced by tourism industry since 2008. In 2014, an encouraging total of 27.44 million tourist arrivals were recorded in the year, raking in receipts of RM72 billion for the industry. Though Malaysia's tourism sector will be geared towards future growth with the promotional plan in capturing high-end tourist segment as stipulated in the NKEA targeting a growth target of between 5-8%, tourism sector which will provide 2.7 million jobs, the industry has human capital issues like having competent and skilled worker for the industry. The industry is not very attractive to potential employees in terms of its remuneration package though the Ministry of Human Resources Malaysia had laid down policy and regulation related to minimum wages. In order for Malaysia to be a develop nation by 2020, the nation needs competent and skillful k-workers who are not only technology savvy but also possessing the academic qualification. With the existing growing working age population 20.3 million in Malaysia, while unemployment rate stand at 3.1% it would be a challenge to Malaysia in years to come.

It is expected by 2020 vocational/certificate job holders will reach up to 1.8 million, provided that all the major players in the industry play their roles accordingly. Consequently, universities have a role to play and thus must not only develop knowledge through theories but also through high quality curricula. They are also responsible to assist the government in building up the inventory of k- worker among not only school leavers but also the existing workforce. Thus, there is a need to build their competency and skill which call for universities to provide flexible learning. Flexible learning can come in the form either blended or fully on line learning. Fully on line is where the course is conducted on elearn platform without student having face to face interaction with their facilitator while blended learning is when the teaching and learning that coalesce e-learning and conventional (Tahar et al. 2013).

Open University Malaysia had been in the race and a fully on line program in Bachelor of Tourism Administration was introduced in 2012 providing a nontraditional learning mode. The course was conducted with full support in terms of teaching and learning deliveries and had received a good respond but it was found that along the way, problem relating to sustaining the learners in the program. The implication of these learners dropping out of class may not only be costly to their potential success in their career but also to the universities' status, effective running of the university and manpower costs (Curry et al. 2001) but the greatest loss of all will be in terms of potential knowledge workers to the nation like Malaysia specifically the tourism industry. However, past study by Anderson et al. (2001) conceptualize three elements must be presence in Open Distance Learning namely : instructional design and organization, social presence and cognitive presence. Rouke et al. (2007) agreed that to have a significant learning outcome, some kind of social discourse is important in getting them engaged and stay on to the course. Thus, having student engaged in open communication and team unity will develop commitment among learners that will continuously stay in the course. Consequently it will be interested to find out whether our learners are into collaborative learning and remain in our system until graduation. Therefore, the objective of this study is to get an insight in the student perspective their experience studying on line environment especially in collaborative learning. Though a lot of flexibility was given in terms of time and teaching delivery and yet problems regarding retention are questionnaire. It is hope that this study will be valuable to the university and also stakeholders to be utilised as an effective marketing strategy and therefore enhanced its effectiveness in the delivery of the program course online.

2.0 Literature Review

Adult learning is not without a problem. With adult learning the challenges faces would be to stay in the program and completing their studies while balancing between family commitment, financial problem and support from the management. Past study had indicate an alarming attrition rate among online learners as high as 70-80% (Flood, 2000, Dagger & Wade, 2004). Frankola (2002) blamed this episode due to the lack of time, motivation, technology slack, lack of support from facilitator and administrator. But Carr (2000) argued that with technology enhancement in the delivery method, high quality and quantity of content, communication facilitation and system operations accessibility, attrition rate had been reduced to as low as 10-20% among undergraduates studies. Recent study by Patterson and McFadden (2009) found the drop-out rate among blended learners was only between 6-7 percentage higher than in conventional learning. Previous study by Arbaugh and Duray (2002) contended that though the e-learn market had grown to more than 35 percentage ever since but the learners performance is of concern and has not been improved. Recent comparative study between conventional and blended learning mode by Chan and Wu (2013) however, had indicated that the teachers presence has a positive relationship with students' performance but it has nothing to do with the mode of study.

Past studies have indicated that in a fully online concept of study, working in teams or groups on line or outside form an important aspect in learning and there were mixed feeling on the benefits of the mode of study. For example in a triangulation study by Kohut and Yon (2013) in two countries, United States of America and Taiwan, they found that for online learners, if were asked to work in teams, they will do so if the electronic communication media is easily accessible to ease their communication with their teams mates. However, most of learners instituted that, it is too time consuming especially when dealing with courses that require them to solve cases. However, in their quantitative survey, more than 51% of argued that they can be more creative when working in groups rather than individual while using the emails as the media of communication. Some of the learners agreed in the interview session that working in teams can be time consuming though it benefited in some way in seeking clarification of course concepts.

Muhammad and Idris (2005) argued that with the technology advancement, the workforces in Malaysia must be technology savvy to meet the country's vision 2020. By then the population have reached to what is expected by being knowledgeable and having competency that are truly advanced which will be vital for a developed nation. To reach to this height, adult learning has to be encouraged. Thus, to encourage learning to take place at workplace, collective learning has to be promoted (Muhammad & Idris, 2005). In their study among working adults above 21 in Malaysia they found that when employer supports education at workplace in enhancing employees' skill and knowledge, they will be motivated especially when given time off and financial assistance.

Letassy et al. (2008) study on team based learning in pharmaceutical industry however found that the performance of student were much better in the team based learning format. Smith (2005) however laid down the advantage of collaborative learning as conjure by Bruffee (1999) as increased learner motivation, development of problem base and critical thinking and opportunity to share, debate and reconstruct new knowledge. Some proponents argued that it increased performance (McConnell, 2000,) though they may face challenges in the technical aspects. Smith (2005) study found that learners faced emotional challenges especially when they felt that there are so many phases in communication channel and they need firstly to understand the emotions of the individual before engaging with the rest of the group. One participant in the study indicate that by group studying it had taught him to be prepared for working career, where group work is vital. The disadvantage of this kind of learning is that it may lead to stress especially when individual in the group could not identify issues or problem.

In relation to performance, Alwagait, Shahzad, Alim, (2014) studied online learners' performance in Saudi Arabia and have suggested that for learners to successful complete a course they need more than 12 hours a week of study. Besides, the team must also be kept small to be effective. This is fully supported by Wolff et al (2014) especially with student doing quantitative subject like Mathematic. Their study applies to both for online and Face to Face learners. On the contrary, studies by Driscoll et al. (2012) and Adam and Nel (2009) had recognized students' performance is not affected by the way the course has been delivered.

When the outcome is learners' satisfaction, prior studies have contradictory finding where Love and Fry (2006) found that student on line student are not as motivated to attend Face to face classes. In another study by Jone and Chen (2008) argued that learners were fully satisfied if they received feedbacks from their facilitators. Du and Wu (2013) however found that in quantitative subject like accounting the facilitator presence does not have an impact on learners' performance.

3.0 Methodology

A qualitative research approach was used to investigate students' experience studying collaboratively in a fully on line environment. In order to gain a richer insight, a semi structured interview was conducted among four students who registered in a fully online Bachelor of Tourism Management with Honours programme under the Open University Malaysia Business School (OUMBS).

Participants

Four students were sampled from an online Bachelor of Tourism Management programme in Open University Malaysia (OUM). The selection was based on purposeful sampling strategy (Creswell, 2007) since it is a popular approach in qualitative studies. It was also used to study a rich and in-depth cases related to phenomenon of interest. To further elaborate, the respondents were also selected based on two criterias namely: (1) participation level in e forum/off line and (2) representative of a group and individual in collaborative learning.

The first criterion involves student's participation in learning collaboratively using the online forum and learning offline/ outside of the virtual classroom. For example, Respondent A was one of the students that was active involvement in online discussion and also uses instant messaging applications from her smartphones to help her further understand the subject matter.

The second criterion for participation selection involved the representativeness of a group and individual in collaborative learning. For example, respondent B was one of the active students that influenced her peers to enroll into the programme and usually gathered her peers to study during spare times that they have during lunch time or during office hours. However, respondent D studied alone whenever time permits him to do so. The profile information for the four research participants are listed in pseudonyms and briefly displayed in Table 1.

Table 1: Profile of Participants

Respondents	Gender	Age	Profession	e-learning exp.	Active level
A	Female	31-35	Assistant Administrator Officer	3 rd semester	Active
B	Female	25-30	Assistant Administrator Officer	3 rd semester	Active
C	Male	20-24	Assistant Administrator Officer	3 rd semester	Moderately active
D	Male	31-35	Flight attendant	4 th semester	Not active

Procedure

A semi structured interview was conducted with respondent A, B and C at the same time and took place at their workplace in a meeting room. The researcher interviewed the participants based on a list of questions expanded from the three primary themes chosen earlier. The questions were open-ended which enable the respondents to express their views, thoughts and experiences freely. Although the interview was in a group, each respondent took turns to answer the questions. The interview lasted for approximately 90 minutes. As for respondent D, considering that he was on his flight attendant duty, the interview was conducted via telephone. The interview lasted for approximately 45 minutes.

4.0 Data Analysis

The recorded audio was transcribed and summarised accordingly to the main themes. It can be deduced through a repeated session of reviewing; three major themes were identified and reported in the section below. Pseudonyms were adopted to report on the research outcomes to honour the respondents request in being anonymous.

5.0 Findings and Discussions

Three themes emerged from the data analysis with reference to study objectives. They are: a) a good relationship as co-workers creates collaborative learning's as a team which makes the online learning manageable; b) connectivity and technology influences the online participation and can facilitate online learning in various forms and c) to integrate blended learning for quantitative courses. Each of these findings will be discussed in this section.

(a) Co-workers creates collaborative learning and manageable online learning

The scarce opportunity of socializing with another human that made the collaborative learning deemed necessary to gain peer support and develop an in-depth group (Sit et.al.,2005). Collaborative learning happens when two or more students learn or make the attempt to learn together. This statement was proven by respondent B when she said *“we usually make time to study together in this room (meeting room in their department) during lunch hour or during our free time”*.

Online community provides opportunity for them to develop the ability to learn from their peers about how to deal with matters of difficult approach (Rolando et.al., 2014 & Sit et.al., 2015) as well as sharing ideas, thoughts and experiences with each other as was said by respondent B and C: *“if we do not understand the first time, we will read and re-read and discuss until we finally understand the subject matter”*. Interesting point to discuss was that respondents A, B and C work in the same department in an organisation. They manage their group work including arranging their offline study environments and coordinating time for groupwork. Intriguingly, the offline collaborative learning enhances their perception towards fully online learning and increases their level of motivation to continue their programme until graduation.

(b) Connectivity and technology influences the online participation

The design of the online programme permits the learners to have control over their studies. They have more flexibility and the freedom to control their learning. Learning could take place at anytime and anywhere as long as the Internet connection download speed is available and strong. The respondents at times use their offices online network and also their broadband to access their *My Virtual Learning Environment (MyVLE)* an in-house learning management system of the university. In this platform learners were given video lectures, pre-posted questions, both html and pdf format module, digital library and also e-forum interactions to enhance the online learning. Furthermore, accessibility to the internet thus plays an important role in connecting learners to the platform.

Interestingly, apart from the connectivity and the technology provided for the learners, the finding manifested that the information provided was sufficient for the learner's independent learning. In short as claimed by respondent B: *“What found the module is good enough for me to understand”*. In addition, due to the aplenty online resources, the learners have the tendency to not participate in the e-forum. Respondent C commented *“Sometimes when other students have asked the question, I feel why I would want to ask the same thing? All I do is to pick up the points from there and move on”*. Previous research found that limited emotive gestures, negotiation problems and tutor's participations were few amongst the many reason why student were not engaged with the online learning. Perhaps this remark could somehow be another paradigm for learner's absence / poor engagement in online discussion.

(c) Blended mode for quantitative courses to optimise the online learning

Overall, all the respondents were satisfied with the features of the online learning programme. The learning material, e-forum discussions, video lectures and the pre-posted questions facilitated the respondents to be engaged in their studies. As respondent B said, *“the fully online course is really good for me as a student and a worker. Just open up the web...the MyVLE...it is so easy, there is no need to rush for classes especially for those who lived far away.”* This study idicated that the benefit of online learning provides some flexibility for learners to obtain education and gives them the empowerment and control on their way they study.

However, although the online learning environment was conducive, as reflected from their responses, they find that quantitative subjects such as statistics and accounting were in fact a challenge as recalled by respondent B and D. Respondent D as a matter of fact had defer his micro-economics paper because he was struggling to understand the concept without a teacher to assist him.

Most likely that enhancement of learning method is required for quantitative subjects. Students were simply discouraged to learn independently especially when the subject required analytical thinking and thus may increase the potential failure rate. Learners preferred to physically meet their tutors instead of solely using the online communication functions, to prove this, one of the respondent said; *“I feel, subjects such as accounting must have at least a slot whereby students could go and meet their tutor whom the tutors could explain to us how to solve the problem on hand. Definitely, I would say that only a handful subjects especially calculation subjects would requires us the meet up with the tutors. Other than that we can learn by ourselves”*. The learner was aware of the differences between quantitative and qualitative subjects and was in fact having no issues with learning related to qualitative subjects on their own. She exerted that *“In fact I am willing to pay for the classes, if the management decided to impose additional charges, it will no issue*. Furthermore, though fully online programme provides the required resource tools e.g. Video lectures on accounting subject, however they put forth that their satisfaction will be enhanced by getting immediate response from a tutor in-person should they come across an obstacle with their calculations.

It is most likely that some kind of human interaction aspect is significant with learners so as to provide them with the opportunity to establish peer and tutor support as supplements to the online learning. It would therefore be good that blended mode study for quantitative subjects which includes a tutorial session on-site classroom and online learning to be considered so as to lessen the unfavourable outcome such as drop-out in the future.

6.0 Recommendations

Thus, deriving from the findings, these are the recommendations to heighten the learning process in an online learning and ultimately elevate the number of enrollment into the programme.

1. Rethinking the marketing communication mix. From the findings, the respondent B had influenced respondent A and C to sign up for the programme. This was similar with respondent D where he had encouraged his colleague to register into the programme as well. Reasonably, it can be assume that an institutional marketing would be suitable to gain larger buyers. To add, instead of having the university marketers as the sole promoter of the programme, the current learners in the programme that comes from specific organisations could promote sharing their experiences with other potential fellow colleagues. Thus, the effects of Word of Mouth (WOM) could subsequently link to a new member signing up and joining an activity (Chen and Xie, 2004).
2. Facilitate a shared online and offline collaborative learning. Personal communication is still a desired aspect in an online learning, hence it is suggested that the university provides a medium for the learners to arrange an online community to share their thoughts with other peers who may not be entirely academic related. The reason for this is to improve socialisation among peers and cultivate the ‘sense of belonging’. To add, an on-site classroom for quantitative subjects should also be considered as a supplementary to online features and a gathering in the beginning of every semester among the online learners could be considered. However, considering that the enrolment is scattered all over Malaysia, this may require a thought through planning.
3. Digitalisation of subject modules and inserting the element of ‘fun’ would make the programme more responsive. Respondent A suggested that the current modules to be formatted as an e-book, *“Book catalogue that looks just like a book... it is where you flip the book just like the IKEA e- magazine”*. Perhaps the use of interactive apps such as iBooks authored by Apple McIntosh which could insert videos, diagrams and other multimedias in one platform. Booktype (www.sourcefabric.org) is another alternative platform for iBooks author, where they can be used to create a digital or ebook. This could be the future for online learning.

7.0 Limitations

It is important to highlight that the findings derived from a relatively small sample and this study although it may not provide a congeal result, it is suggested that the idea could be used and expanded for further investigation on other disciplines that offer fully online courses. This study is initiated to explore the learners' experiences on a fully online programme offered by the university.

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Asian Association
of Open Universities



Sub-Theme 3

New Research and Practices in Open and Distance Learning (ODL)

PROCEEDINGS

COST ANALYSIS OF A DEGREE PROGRAMME AT THE OPEN UNIVERSITY OF SRI LANKA: AN EMPIRICAL STUDY

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Abstract

In a sustainable Open and Distance Learning (ODL), providing immediate access to learning resources and fostering effective teacher-learner interactions are critical parts while minimizing the costs of the study programme without compromising quality. The Open University of Sri Lanka (OUSL) offers over forty study programmes covering more than nine hundred courses. Owing to the diverse nature of these study programmes the expenses incurred in one study programme may differ with that of another programme. The total cost of an ODL study programme varies by institution, by faculties and by intensity of the relevant degree. Many ODL institutions charge per course or per credit for their courses, instead of a flat rate per academic year. Therefore, accurate costs analysis is crucial to assess the actual expenditure of different study programmes to enhance the sustainability of these study programmes while providing affordable fee structures to students. The main focus of this study is to analyze the cost of the most demanded OUSL degree programme (i.e. Bachelor of laws degree programme) taking into consideration the both direct and indirect costs. The direct costs of the courses of the study programme were calculated based on expenditure of activities relevant to four broad categories; course materials design and development, course materials production, course delivery and students evaluation. The indirect costs were calculated by considering utilities, salaries of employees, specialist administrative functions related to services common to all OUSL study programmes, and total number of credits offered in the programme. The findings of this study revealed that a surplus of LKR 33 per credit per course was obtained. Further, results of this study contradicting to the earlier results of low indirect costs reported in other countries. Therefore, the OUSL has to take remedial measures to minimize the indirect costs by effectively utilizing its resources both human and infrastructure. Hence, the savings that resulted from reduction of indirect cost should be channeled to enhance the quality of learner support thus, mitigating student isolation.

Introduction

In a sustainable ODL system, providing immediate access to learning resources and fostering effective teacher-learner interactions are crucial components while minimizing the costs of the study programme without compromising quality.

The public funds on education in Sri Lanka were reduced as 2.06 %, 1.97%, 2.00% and 1.72 % of GDP for the years 2009, 2010, 2011, 2012 respectively (UNESCO, 2013). It is a challenge for the survival of higher education institutes in Sri Lanka of which depends on government funds. The government of Sri Lanka had to face a challenge in providing higher education for the student those who were leaving the schools with acceptable results from GCE (A/L) examination and career development of adult working crowd (Coomaraswamy, 2013).

As a result, the Open University of Sri Lanka (OUSL) was established under the Universities Act No. 16 of 1978 and the Open University of Sri Lanka Ordinance No. 16 of 1990. The OUSL is the only state university which is fee levying distance learning institution and therefore, registered students are required to pay fee for their studies at the OUSL (MoHE, 1980). The course fee is charged from registered students to cover expenses relating to preparation of course materials, payment for visiting academics, Continuous Assessments Tests (CATs) and examinations. It is generally accepted that course fee charged from students cover only 1/3 of total costs and the remaining 2/3 is subsidized by the Government of Sri Lanka by means of salaries of permanent staff of the OUSL (LLB information booklet, 2013).

Objective of the Study

The main objective of this study is to determine the cost per credit per course of LLB study programme conducted by the OUSL. The approach of the present study of costing the ODL study programme improves the appropriateness of decision made by leaders of ODL institutions in the view of the finance feasibility when introducing new study programmes. In line with the above objective, three research questions are formulated as “What are the categories to be considered to determine total direct costs of an ODL course?”, “How can be apportioned the indirect costs (overhead) in calculating total indirect costs of an ODL course?”, “What is the relationship between direct costs and indirect costs of ODL course at the OUSL?”.

Significance of the Study

The study is significant as the research findings obtained are expected to add to the growing body of knowledge pertaining to higher education, especially cost effectiveness of ODL study programmes.

Review of Literature

In the decades of 1970 and 1980 plenty of cost analysis has been carried out on ODL system. A certain studies focused on educational technology rather considering major categories of courses design and development of course material, production of course materials, delivery of instructions including student support and student evaluation and overheads (Rumble, 2003). On the other hand, number of cost analysis was done based on operating costs of courses at the Open University of United Kingdom (OUUK). Based on the OUUK cost studies Wagner, 1972, 1977; Laidlaw and Layard, 1974 cited in Rumble (1997:120) concluded that ODL courses are cheaper than traditional forms of higher education. However, Mace (1978) has commented differently on OUUK studies by emphasizing on comparison of ODL system and conventional education setting with the strong opposite view. Mace (1978) specified that these two systems cannot be compared as their cost structures and outputs are not identical. This opposite view could be accepted since the students in conventional universities are young and full time learners while the ODL students are most probably part time adult workers. Therefore, the expenses are incurred in different way at these two systems.

Rumble (1979, 1997) conducted many studies with his experience as planning officer at OUUK introducing a system approach to cost ODL courses (1997:6). It describes two major operating systems and two spare subsystems. Major subsystems include Materials subsystem and Student subsystem besides two spare sub systems include regulatory subsystem and logistical subsystem. Roles of Materials subsystem consist of instructional design, development and production of course materials, delivery of course and student evaluation. Student subsystem deals with all student affairs from student enrolment to graduation. Regulatory subsystem plans and manages overall ODL institution. Finally, a logistical subsystem deal with financial and human resources with infrastructure facilities. The system approach of the Rumble (1997:6) is widely used as a framework in various costs studies. Gradually development of online technology as a major instructions delivery system Rumble (2001) expanded his framework to apply costs analysis for online learning named as networked

learning. The costs analysis made on online learning by Rumble (2001) highlighted the importance of overheads and infrastructure costs combining previous logistic and regulatory subsystems. Further, Rumble (2001) introduced a comprehensive list of activities to be considered when making cost analysis of ODL system. Rumble's (1997:6) system approach, therefore, helps analyze costs of an ODL course without missing any activity. The previous studies conducted for online learning (Inglis, 1999; Whalen and Wright, 1999) have ignored overhead costs. Pillai and Naidu (1991) conduct a study to determine costs of ODL courses including indirect costs. Indirect costs (overheads) are not directly identifiable with an invention or a process or a cost centre (Pillai and Naidu, 1991). However, availability of reliable data about student costs and whole institutional costs for any higher education study programme is essential to determine indirect costs.

When observing cost structure of ODL courses, costs category of instructional design and course material development can be considered fixed costs since courses are offering for many years without change them or with slightly changes. Pillai and Naidu (1991) and Rumble (1997:45) emphasized on annualisation of initial fixed costs based on standard formula which take account of both the cost of depreciation and the opportunity cost of interest forgone as:

$$a(r, n) = \frac{r(1 + r)^n}{(1 + r)^n - 1}$$

Where $a(r, n)$ is the annualisation factor, n is the life of the capital investment, and r is the prevailing rate of interest. After obtaining $a(r, n)$, the costs of course material design and development for one year is calculated as:

$$\text{Costs of course material design and development for one year} = (\text{course material design and development costs}) \times a(r, n)$$

Abeyasinghe *et al.*, (2013a) conduct a study to find out direct costs of ODL course at the OUSL based on Rumble's (1997:6) ODL system view. Though annualisation of initial fixed cost was adapted to the study indirect costs were not properly determined.

Methodology

As the study attempts to determine cost of ODL study programme, the study is basically descriptive in nature. Descriptive studies are usually the best methods for collecting information that will demonstrate relationships and describe the context as it exists. Further, descriptive studies, in which the researcher interacts with the participant, may involve surveys or interviews to collect the necessary information. Descriptive research study design is fit to the present study since it involves collecting vast amount of data through surveys and interviews. Structured interviews were used as the main method of gathering information from different key personnel. In addition, documentary evidence such as documents associated to procedures, mechanisms, approvals, circulars, paying vouchers, working sheets were used to collect other relevant information. Further, direct cost has been determined according to the time consumed by the particular activity and the rate paid to professionals who were engaged with particular tasks.

Selection of the Study Programme

Different types of OUSL study programmes are delivered using a network of regional centers. The department of Legal Studies under the faculty of Humanities and Social Sciences (HSS) of the OUSL has been offering Bachelor of Laws Degree programme (LLB) since 1984. According to the information booklet of LLB Study programme for 2013/2014, the LLB study programme consists of 17 courses in different study levels. The LLB degree programme can be completed in minimum four academic years of 12 months. Therefore, LLB study programme were selected for the study.

Main Components of the Study Programme

Like other degree programmes at the OUSL, the LLB degree programme besides consists with three main components:

- Print course materials: Books are provided for each course in 2 local languages (Sinhala, Tamil) and in English.
- Delivery method: Twenty hours face to face sessions are provided per year (3 hour session per day) at six regional centers.
- Assessment and Evaluation: Students are required to do Tutor Marked Assignments (TMAs), Closed Book Tests (CBT), Open Book Test (OBT), Oral presentation, Project reports and final examination at the end of academic year.

Proposed Conceptual Framework

The present study used the conceptual framework proposed by authors illustrated in figure -1. It describes how to integrate direct and indirect costs of deferent categories to get the total costs. To identify major activities relevant to the study programme, the system view of ODL in Rumble (1997:6) has been used. The identified major activities are presented in table 1. To construct the conceptual framework researchers have analyzed activities relevant to the courses of LLB degree programme.

Table 1: The Major Activities Relevant to the ODL Courses

Material subsystem	Student Subsystem	Logistical Subsystem	Regulatory Subsystem
Design of courseware	Enrollments	Human resources management	Overall Planning
Production of courseware	Conducting Face-to face sessions	Provide infra-structure facilities	Decisions making
Distribution of courseware	Conducting continuing Assessments and examinations	Make arrangements to make payments	Administration of the overall system
Reception of courseware	Organizing Certification graduation ceremonies	Coordination of local centers	Academic administration

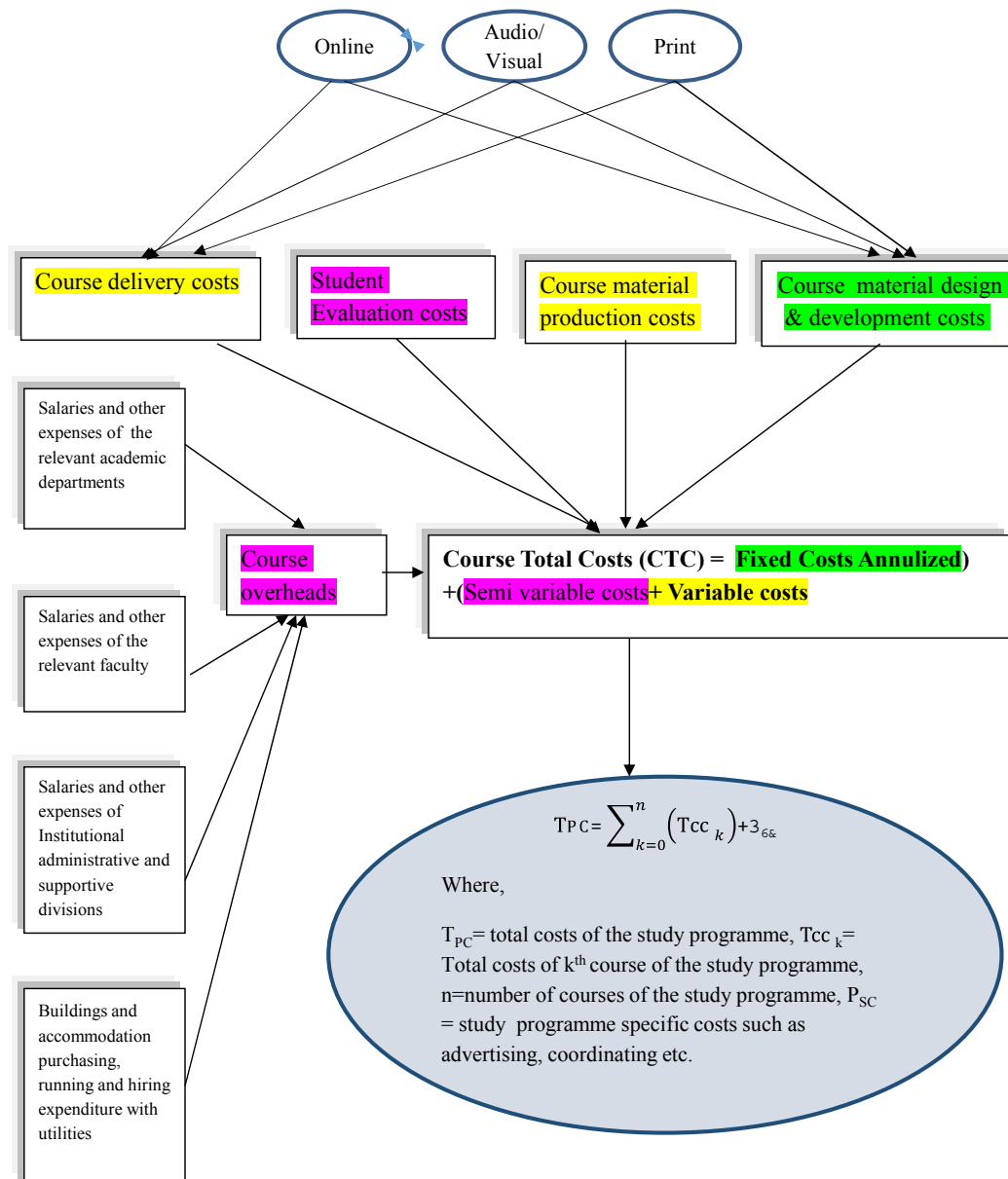


Figure -1: Conceptual framework to determine total costs of ODL study programme

Data Gathering

The data relevant to costs of course development related to the material subsystem (in Rumble, 1997:6) were gathered from interviewing academic staff who had estimated costs for new programmes, academic coordinators of the selected courses of the LLB study programme, the printer and assistant bursar at the press/OUSL. According to them the production costs for course material were calculated assigning the costs for relevant quantity of course materials and labour charges and available as annual report for the management of the OUSL. Apportioning of overheads such as cost of machineries by applying depreciation values and repair charges of the relevant machines, water and power consumption were also considered. The data relevant to cost of conducting face to face sessions (Day Schools) Tutor Marked Assignments (TMAs), Continuing Assignment Test (CATs) and Final examination were collected from structured interviews focused on relevant academic, academic support, administrative and technical staff of the various departments/divisions including local centres of the OUSL. The documentary evidence circulars, minutes of meetings, paying vouchers, working schedules, cost sheets were also used. The costs related to student subsystem were collected from relevant academic, academic support, administrative, course coordinators at the two

types of local centres (Regional Centres – RCS, Study Centres – SCS) in which students come for the contact sessions (day schools) and relevant clerical staff of the various departments/divisions of the OUSL, using a structured interview schedule. Further, details of conducting examinations were obtained from the Senior Assistant Registrar who is the Head of the examination division.

Director/Information Technology (IT) and system analysis at IT division were also consulted to gather past student enrollment data. The student's evaluation costs were estimated from the records available at relevant RCs and SCs. Details of payments were obtained from the Bursar who is in charge of the finance division, Senior Assistant Bursar/accounts and their staff related to logistical subsystem (in Rumble, 1997:6). Heads of Operations and Regional Educational Services were interviewed in order to get the information related to the (senior management of the OUSL) regulatory subsystem (in Rumble, 1997:6).

Results and Discussion

The basic formula used to calculate total costs of ODL courses is described as

$T = F + VS$, Where T = total costs, F = fixed costs, V = Variable costs and S = number of students.

The standard formula for calculating the annualisation factor (Rumble, 1997:45) which has been used to take account of both the cost of depreciation and the opportunity cost of interest forgone is:

$$a(r, n) = \frac{r(1 + r)^n}{(1 + r)^n - 1}$$

Where $a(r, n)$ is the annualisation factor, n is the life of the capital investment, and r is the prevailing rate of interest. The interest rate would be lower, however, the risk free investment in Sri Lanka is investing in Government Treasury Bills and its rate was 10 %. By substituting $r = 10\%$ and $n = 5$, to the formula = 0.264 was obtained.

Annual cost for course material design = initial capital cost $\times a(r, n)$.

The calculated direct costs of LLB study programme is tabulated in table 2. Apportioned indirect costs for different heads relevant to LLB study programme based on year 2013 registration is tabulated in table 3.

The column 3 of table 2 contains costs of course materials design and development and the annualized costs of these initial fixed costs are in column 4. The variable costs of direct costs such as course materials production, course delivery and student evaluation costs are available in the columns number 5, 6, 7 respectively. Columns number 8, 9, and 10 contain the total costs, course code, and all direct cost per credit per course. Costs per credit of a particular course relevant to course material design and development is available in column 11.

To determine indirect costs of a particular course expenditure of each services department were considered. In these process services departments are categorized under three groups, (1) divisions in which outside the four faculties but within the OUSL, (2) outside the academic departments but within the faculty, and (3) outside the particular study programme but within the academic department. Subsequently, apportioning the costs relevant to OUSL administration the total expenditure of the OUSL not relevant to all 4 faculties or 19 academic departments were divided by all student credits relevant to OUSL in the year 2013. When apportioning the costs relevant to the faculty administration expenditure of HSS Faculty administration was divided by the number of student credits of the faculty of HSS. Finally when apportioning the costs relevant to the department of Legal studies total expenditure for year 2013 were divided by the number of student enrolled for

the LLB degree programme. The outcomes of the apportioning process were tabulated in table3. The table 3 presents indirect costs of all 17 courses of LLB degree programme for year 2013 which comprises semi variable costs as salaries of academic employees, non-academic employees under central administration of the OUSL, Faculty of HSS and department of Legal study department. In addition it included utility and infra-structure costs. According to the table, average percentage to total cost of indirect cost is 0.79. This figure is contradicting to the earlier results of low indirect costs reported in other countries. A study was conducted at IGNOU by Pillai and Naidu (1991) found that the percentage of indirect cost to total costs was 34.79. However, costs of an ODL course depends on the context. Therefore, this kind of variance could be found. Further, the present study discloses that the ratio of direct costs / indirect costs of the OUSL study programme were comparatively higher to that of an IGNOU study programme.

Referring to the formula described in conceptual framework in figure -1 the total costs of study programme get adding total costs of 17 courses of the study programme (LKR 84,711,019) with advertising costs (LKR 507,416) and coordinating costs (LKR 150,000) as describes follows;

Total study programme costs = addition of all 17courses total costs + advertising costs + coordinating costs

= LKR (84,711,019 +507,416+ 150,000)

= LKR 85,368,435 (US \$ 666,941)

Average cost per credit per course = LKR 85,368,435 / 104,466 (total number of credits of the programme)

= LKR 817 per credit

Table 2: Direct Cost Analysis for LLB Study Programme based on Year 2013 Registration

		Total no of student	Total no of credits	Costs for course materials development	Course material development costs – Annualized for 5 years	Costs for course materials production	cost day schools	Costs for student evaluation	Total direct costs	Course code	cost per credit	Cost per course material design and development costs per student
	COLUMN NUMBER	1	2	3	4	5	6	7	8	9	10	11
1	CONSTITUTIONAL LAW I	1,537	9,222	384,000	107,904	644,642	319,500	860,720	1,932,766	LWU 1201	210	70
2	PRINCIPLES OF EQUITY	1,519	9,114	96,000	26,976	208,233	319,500	881,020	1,435,729	LWU 1202	158	18
3	INTRODUCTION TO THE LAWS OF SRI LANKA	1,659	19,908	384,000	107,904	695,811	319,500	929,040	2,052,255	LWU 1411	103	65
4	LEGAL METHOD	1,545	18,540	384,000	107,904	655,676	319,500	865,200	1,948,280	LWU 1412	105	70
5	LAWS OF CONTRACT	977	8,793	204,000	57,324	265,571	319,500	586,200	1,228,595	LWU 2311	140	59
6	CRIMINAL LAW	916	8,244	204,000	57,324	248,989	319,500	586,200	1,212,013	LWU 2312	147	63
7	FAMILY LAW	937	8,433	48,000	13,488	151,194	319,500	178,920	663,102	LWU 2313	79	14
8	CONSTITUTIONAL LAW II	892	8,028	38,400	10,790	260,268	319,500	178,920	769,478	LWU 2314	96	12
9	ADMINISTRATIVE LAW	272	2,448	28,800	8,093	43,890	142,000	168,640	362,623	LWU 3311	148	30
10	LAND LAW	284	2,556	48,000	13,488	82,866	142,000	178,920	417,274	LWU 3312	163	47

11	ENVIRONMENTAL LAW	274	2,466	38,400	10,790	72,670	142,000	175,360	400,821	LWU 3314	163	39
12	INTERNATIONAL LAW	277	2,493	48,000	13,488	72,670	142,000	175,360	403,518	LWU 3315	162	49
13	JURISPRUDENCE	128	1,152	38,400	10,790	82,866	142,000	175,360	411,016	LWU 4321	357	84
14	LABOUR LAW	104	936	38,400	10,790	82,866	142,000	1,659	237,315	LWU 4323	254	104
15	COMMERCIAL LAW	92	828	38,400	10,790	82,866	142,000	1,659	237,315	LWU 4324	287	117
16	HUMAN RIGHTS LAW	34	306	12,800	3,597	27,622	47,333	1,659	80,211	LWU 4325	262	106
17	LAW OF DELICT	111	999	38,400	10,790	82,866	142,000	1,659	237,315	LWU 4326	238	97
	TOTAL	11,558	104,466	2,072,000	582,232	3,761,565	3,739,333	5,946,496	14,029,626		3,069	1044

** (all costs are in LKR, in year 2013, LKR 1 = US \$128)

Course fee charged from student by the OUSL is LKR 850 per credit per course in the year 2013. Therefore, finding of the study shows that a surplus is available and it was LKR 33 (LKR 850-817) per credit per course of the LLB degree programme.

Table 3: Apportion of Indirect Costs for Different Heads Relevant to LLB Study Programme based on Year 2013 Registration

Serial No	Course code	OU expenditure Programme-I Finance and General administrations expenditure -per credit	Salary expenditure for Finance and General administrations -per credit	Salaries of RES -per credit	Salaries of Library & CETMe - per credit	Welfare service - per credit	Maintenance - Lands, building Utility - per credit	IT and hostel - per credit	HSS Deans office expenses per credit	Academic staff Salary -Department of Legal studies - per credit	Nonacademic staff Salary -Department of Legal studies - per credit	Other expenses of the -Department of Legal studies - per credit	Total indirect cost including salaries - per credit	Total indirect cost excluding salaries - per credit	Total (direct & indirect) costs per credit - including salaries - per credit	Total costs for course	course fee per credit
	COLUMN NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	LWU1201	121	94	21	60	3	33	59	60	206	12	7	677	309	886	8,172,345	850
2	LWU1202	121	94	21	60	3	33	59	60	206	12	7	677	309	834	7,602,235	850
3	LWU1411	121	94	21	60	3	33	59	60	206	12	7	677	309	780	15,521,950	850
4	LWU1412	121	94	21	60	3	33	59	60	206	12	7	677	309	782	14,492,391	850
5	LWU2311	121	94	21	60	3	33	59	60	206	12	7	677	309	816	7,177,913	850
6	LWU2312	121	94	21	60	3	33	59	60	206	12	7	677	309	824	6,789,880	850
7	LWU2313	121	94	21	60	3	33	59	60	206	12	7	677	309	755	6,368,846	850
8	LWU2314	121	94	21	60	3	33	59	60	206	12	7	677	309	772	6,201,200	850

9	LWU3311	121	94	21	60	3	33	59	60	206	12	7	677	309	825	2,018,932	850
10	LWU3312	121	94	21	60	3	33	59	60	206	12	7	677	309	840	2,146,656	850
11	LWU3314	121	94	21	60	3	33	59	60	206	12	7	677	309	839	2,069,309	850
12	LWU3315	121	94	21	60	3	33	59	60	206	12	7	677	309	838	2,090,275	850
13	LWU4321	121	94	21	60	3	33	59	60	206	12	7	677	309	1,033	1,190,456	850
14	LWU4323	121	94	21	60	3	33	59	60	206	12	7	677	309	930	870,610	850
15	LWU4324	121	94	21	60	3	33	59	60	206	12	7	677	309	963	797,537	850
16	LWU4325	121	94	21	60	3	33	59	60	206	12	7	677	309	939	287,250	850
17	LWU4326	121	94	21	60	3	33	59	60	206	12	7	677	309	914	913,235	850
	Total															84,711,019	

** (all costs are in LKR, in year 2013, LKR 1 = US \$128)

However, this much of surplus could not be exists for the study programmes contain more practical oriented courses relevant to faculty of Natural Sciences and faculty of Engineering Technology.

Conclusion

The findings of the study shows that the high fixed costs of course material design and development could be spread across a large number of students by offering a long shelf life. (i.e. LKR 384,400.00 the cost of course materials design and development for LWU1201 course can be annualized to one year as LKR 107,904 and spread-out to one student as LKR 70.20). Further, the uncontrollable (by increasing student enrolment) variable costs of ODL courses such as delivery cost per student can be managed by developing high quality course materials which would guarantee less student support. Alternatively, open education resources (OER), if available, hold some of the answers to significantly reducing the cost of education maintaining the quality of learning material and gives opportunity to use technology to maintain the quality of instructional materials while significantly cutting educational costs.

Recommendations

The OUSL has to take remedial measures to minimize the indirect costs by effectively utilizing its both human and infrastructure resources. Hence, the savings that resulted from reduction of indirect cost should be channeled to enhance the quality of learner support thus, mitigating student isolation. Similarly, the study revealed a surplus is available for particular course after deducting the course by total costs. The present surplus for this study programme would also be used to improve the wider accessing of ODL courses to the learners by holding face to face sessions at more regional centres.

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A COST ESTIMATION MODEL TO EVALUATE EXPENDITURE OF ODL STUDY PROGRAMMES

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Abstract

Delivering courses through Open and Distance Learning (ODL) is considered as a feasible solution, as many regard it as a cost-effective alternate when it reaches masses. Therefore, there is a high demand for delivering courses through ODL. Judgment of cost-effectiveness is based on an assumption instead of calculating cost and assessing effectiveness. The purpose of this study is to propose a workable costing model that provides users with a framework to help them to calculate total costs of an ODL course. The total costs of any course include direct and indirect costs. In contrast, a great investment is needed to design and development of course materials, even before enrolling any single student. Therefore, finding out the costs of courses is significantly important. The proposed model considers both direct and indirect costs. The direct costs is determined based on expenses relevant to four broad categories; course materials design and development, production, course delivery and students evaluation. The bottom-up cost estimation approach is where it gets the total costs adding the costs of all ingredients in a course. Indirect costs of the courses were calculated by considering the salaries of the academic, non-academic, technical, administrative staff, costs for utilities, and costs associated for the faculty and other administrative divisions which provide services to all courses of the Open University of Sri Lanka and total number of credits offered in all the courses at the University. The significance of the proposed costs estimate model is to provide an effective mechanism to calculate total costs for any ODL course since it formulate both direct indirect costs, assisting both decision makers and academics of any institutions, to calculate actual costs of any ODL study programme. Developing a costs estimate tool based on software application is proposed as a future direction of this research study.

Introduction

Delivering study programmes through Open and Distance Learning (ODL) has become a popular and largely effective tool over the globe for expanding learning access to potential learners. Therefore, there is a high demand for delivering study programmes through ODL. Further, ODL plays a vital role in empowering all strata of learners as it reaches masses. In the last few years, learners, their parents and employers' interest in learning and training through ODL were enhanced dramatically. It has occurred due to the changes in society with the advances in audio-visual media and telecommunication technology, which in turn resulted in an increase in both access and the diversity of subject areas offered by ODL institutions. Afterward ODL has gained the ability to provide training and education for those who are unable to attend traditional campus due to cultural, economic, physical, or geographical obstacles (Rumble, 2004). At the same time costs of delivering ODL study programmes were also increased dramatically because of increase of prices. Therefore, a model to evaluate expenses of ODL study programme can facilitate in deciding balance of the demand and costs of ODL study programmes. However, a minimal number of cost studies on ODL courses took place after the year 2000. The statement is supported by Zawacki-Richter et al. (2009) who carried out review on ODL research where only 12 articles were found to be on costs and benefits out of 695

articles (i.e. 1.7%). As well as in Sri Lankan context very few studies have been found with respect to direct costing of ODL courses for the past 35 years at OUSL which is the only institution offering course through ODL technologies. In view of this expansion of ODL system, the Government of Sri Lanka has made arrangements to establish the Open University of Sri Lanka (OUSL) to deliver courses through ODL technologies. From the inception of OUSL the opportunities for adult learners who were deprived of embarking on higher education due to limited opportunities at the conventional universities in Sri Lanka is significant (Coomaraswamy, 2013). The OUSL offers its own programmes of study leading to Certificates, Advanced Certificates, Diplomas, Degrees and Postgraduate Diplomas and Postgraduate Degrees. In addition to these main academic programmes, there are continuing education courses, beginner's courses and awareness programmes. The OUSL provides a readily accessible and progressive ladder of opportunities for study and to improve the vocational, professional expertise while earning to a potential of an individual.

Objective of the Study

The main objective of this study is to develop a cost estimation model which determines cost per credit of an ODL course based on both direct and indirect costs.

- (a) "How does it decide cost per credit per course in aggregating direct and indirect costs for ODL study programme?"
- (b) "What variables to be included to develop the cost estimation model for ODL study programme?"

Significance of the Study

As institutions witness the growth of competitive institutions which would target potential distance learners, they must have knowledge on costs of course materials design and development, course delivery, student evaluation and indirect costs to decide economic feasibility of a study programme. Therefore, before undertaking any ODL study programme complete understanding of costs to be met is essential for an institution of higher education.

Review of Literature

Oliver's (1987) framework is derived from cost studies of educational broadcasting systems. Orivel (1987) summarized features of ODL costing based on previous cost studies to develop common methodology for economic studies of distance education. It includes necessary things such as recognize that there no free resources, separation of recurrent costs from capital, separate recurrent costs in to salaries and non-staff expenses, separation of capital costs into equipment and building costs, annualize capital costs using three main life-expectancy categories (a) two to five years, (b) six to ten and (c) above ten, and analyze the costs of each medium. Undoubtedly two to five years life-expectance outfit with cost estimation of ODL course since within five years or below five years since course materials has to be changed due to the present speed of expansion of the knowledge relevant to any subject.

Literature evident that calculation of direct costs of ODL courses were existed in many studies (Bates, 1995, Curran, 1995, Hülsmann, 2000, Pillai and Naidu, 1991, Rumble, 1988). Pillai and Naidu (1991) revealed the significance of indirect costs in calculating total costs of ODL courses. Abeyasinghe et al. (2013b) developed costing model for blended learning course at the OUSL. This model calculated direct cost as an addition of costs of course material design and development, course material production, course delivery with student evaluation. It considered 25% of direct costs as indirect costs of blended learning course at the OUSL. The calculation of this model could be improved by applying apportionment of indirect costs in accordance with a rational. According to Pillai and Naidu (1991)

apportionment of indirect costs becomes necessary when the collective expenditure in respect of an overhead item is shared between two or more cost centers. There is no one correct method for such apportionment. If possible, the apportionment method should be rational, unbiased and workable (Pillai and Naidu, 1991).

Similarly, Rumble (2001) highlighted the importance of overheads and infrastructure costs which was originally categorized relevant to logistic and regulatory subsystems of the system view distance education (Rumble, 1997:6). The overhead and infrastructure costs are not directly connected with a particular course. However, they have an involvement to increase the total cost of an ODL course. Therefore, calculating costs relevant to overhead is amalgamated work, and then most often the overhead costs are ignored by researchers. However determining indirect cost of ODL courses is intermittent according to the available literature relevant to costing of ODL courses. Rumble (2003) explained problems with cost models of ODL system. He highlighted that total costs of a system (T) will be equivalent to the sum of fixed costs (F) to be added with the variable cost per unit of activity (V) times the volume of the activity (X):

$$T = F + VX$$

In this formula the essential variables, which affects costs are not mentioned. This is a serious weakness of the model. This issue can be overcome by including variables to share overheads (indirect costs) as a common criterion (i.e. Student credits enrolled for a study programme, for an academic department, for a faculty or school and whole institution). The study attempts to cover the all the costs of ODL courses including direct and indirect costs by proposing a comprehensive formula for determining them in maximizing the benefits of educational institutes without spending more time for calculating total costs of a courses and cost per credit per course.

Methodology

Relevant activities of a course were identified under four broad categories in order to calculate the total direct costs based on activities of the ODL course as shown in Table 1. The components of direct costs are, costs of course material development, costs of course production and costs of course delivery including costs related to student evaluation. Course material development costs include session writing costs. Course material production costs include production of textbooks, audio and videos. Course delivery costs comprise of distribution of print course materials, costs relevant to contact sessions and costs associated with tutoring and student evaluation. Overhead and infrastructure costs incorporate payments for all categories of staff who are not directly involved with a particular course, operational and maintenance costs for the networks, and utility expenses of main campus and Local centres, etc. In this study, direct cost has been determined according to the time consumed by the particular activity and the rate paid to professionals who were engaged with particular tasks.

Table 1: Adopted from Rumble (1997:6)

Material Subsystem	Student Subsystem	Logistical Subsystem	Regulatory Subsystem
Design and development of course materials	Student admission	Human resources management	Overall Planning of the institution
Production of course materials	Conducting day schools and other support services	Provide infra-structure facilities	High level decisions making
Distribution of course materials	Holding final examinations and continuing Assessments Tests	Make arrangements to do the payments	Administration of whole institution
Receiving of course materials	Organizing Certification graduation ceremonies	Coordination of regional and study centers	Academic administration

Therefore, if different skills level personal involved for same work, the average rates were used. Rates for the payments were obtained from finance circulars of the Open University of Sri Lanka. Identification of major activities for any ODL course is illustrated in table 2. Subsequently, the basic costing equations (Eqⁿ (1) and Eqⁿ (2)) were used to get the total costs for a course. Figure1 illustrates the process of developing the costing model for ODL courses at the OUSL combining direct costs, indirect costs with number of enrolled student credits. To share common costs of top management, general administration and local centre wise expenditure number of enrolled in different faculties and departments were collected using template illustrated as Table 5 (Appendix -2).

In this study, direct costing has been carried out according to the time consumed by the particular activity (cost driver) and the rate paid to professionals who were engaged with particular tasks. Therefore, if different skills level personal involved for same work the average rates were used. Rates for the payments were obtained from finance circulars of the Open University of Sri Lanka.

$$T = F + V \text{ -----Eq}^n(1)$$

Where, T= total costs, F= fixed costs, V= Variable costs

$$(r, n) = \frac{r(1+r)^n}{(1+r)^n - 1} \text{ -----Eq}^n(2)$$

Where a(r, n) is the annualization factor, 'n' is the life of the initial capital investment for course materials design and development and 'r' is the prevailing rate of interest.

E.g. n = 5 and r = 10 then a(r,n) = 0.264.

Table 2: Summary of Identified Direct and Indirect Cost Elements for an ODL Course in OUSL of Sri Lanka

	Category	Item	Description	Fixed or Variable Costs	Direct or Indirect Costs
1	Course material Design & development	Need analysis survey	Need Analysis costs (based on number of hours spent for the tasks): Preparation of the needs assessments with consulting stakeholders, Conducting workshops for internal and external staff, Course team meetings, Preparation of the questionnaire, Administering questionnaire, Analyzing the data collected through questionnaire	Fixed	Direct
		Syllabus development	Syllabus development costs (it depends on the media integration/selection) based on hours spent	Fixed	Direct
		Course content development	Payment for authors and editors for session writing and editing (session based payment was applied)	Fixed	Direct
2	Course material production	Reproduction according to a student number	Printing cost for all text books	Variable	Direct
3	Instruction delivery/student support	Delivery	Visiting academic payments for Face - to -face sessions (one session = 3hrs) support staffs and other relevant costs for a face-to-face session Expenditure for academic coordinators, Demonstrator, Technical officers, utility and other consumables	Semi Variable	Direct
4	Student evaluation	Continues Assessments	Expenses for preparation of class room test	Semi Variable	Direct
			Expenses for conducting class room test	Semi Variable	Direct
			Marking Continues Assignment Tests (CATs)	Variable	Direct
		Final examination	Final examination expenditure (Setting, moderating of question papers, conducting and marking answers scripts)	Variable	Direct
5	Overheads	Separately considered for each category such as General Administration of the OUSL, Administration of Faculty and Administration of academic departments	Personal Emoluments for Academic, Non-Academic including overtime payments, payment for Travelling & subsistence, supplies, Maintenance, Contractual Service including Electricity & water bills, security service etc. Other recurrent expenses, such as workshops, seminars, academic research etc.	Semi-variable	Indirect

In order to identify common structure for indirect costs different study programmes were considered relevant to four faculties. The income and expenditure reports of final accounts of the OUSL have been observed for the last 3 years (2012, 2013 and 2014) as well as enrolled student credits for the last 3 years (2012, 2013 and 2014) have been used in proportion to the estimated benefit by each course.

Conceptual Framework

The activities of the relevant four cost categories are in first two columns of the system approach of Rumble (1997:6) in table 1. A detailed classification of the activities of the four categories as fixed and variable costs are illustrated in table 2.

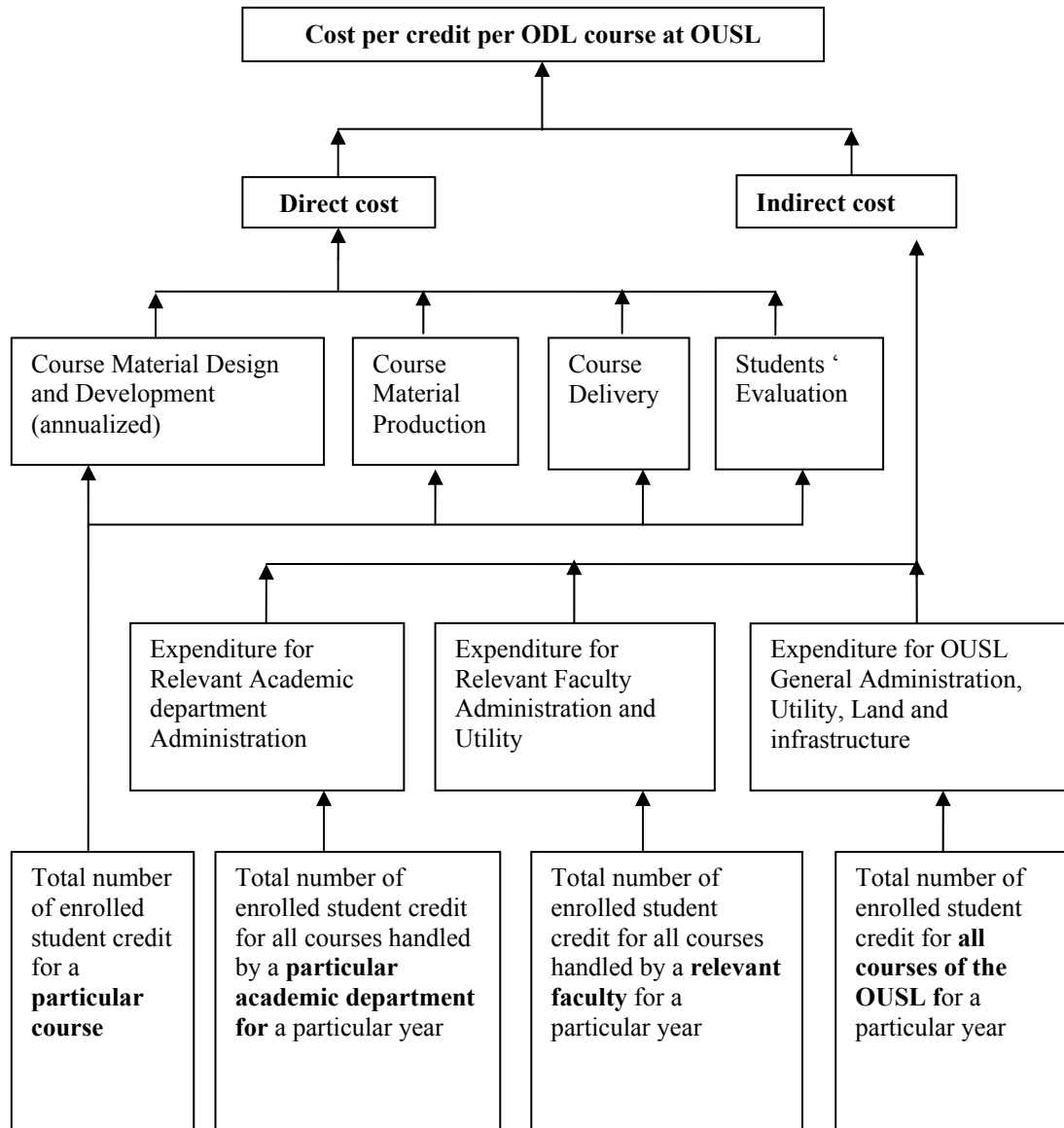


Figure -1: Conceptual framework for estimating direct and indirect costs of open and distance learning courses at OUSL

The process of ‘attaching’ overhead costs (including salaries of employees attached to different divisions) to student services for an ODL course is by cost apportionment (sharing) and cost absorption is illustrated in conceptual framework of the study as Figure -1. It was a need to identify all the operating expenses related to study programmes of the institution to analyze the indirect costs. It had to account the total expenses of the all the courses offered by the institution including other courses offered by the same academic department; courses offered by other academic departments of the relevant faculty, courses offered by other faculties along with the number of students credit for the courses. It also considered all the expenses relevant to the division which handles the academic support and administrative support for the ODL courses.

Results and Findings

The aim of the study was to determine unit costs per credit per course relevant to the various ODL courses based on equations (Eqⁿ1, Eqⁿ2).

Seven different study programmes conducted by the four faculties of the OUSL have been considered. Based on the behavior of the activities of cost categories attributed to direct and indirect costs of the said seven study programmes, a formula was developed to determine a unit cost (cost per credit) disclose in equation 3. The formula developed for calculating cost per credit per course is described as follows;

$$Cp = \frac{D \times a(r, n)}{Nc} + \frac{(P + T + E)}{Nc} + \frac{(Ua + Un + Ut)}{Nu} + \frac{(Fa + Fn + Ft)}{Nf} + \frac{(Da + Dn + Dt)}{Nd} \text{-----Eq}^n(3)$$

Where,

Cp = cost per credit

a(r, n) = Annualization factor (i.e. 0.264 could be obtained by substituting values for Eqⁿ (2) as n = 5 since the course life cycle at OUSL is 5 and forgone interest could be considered as r = 10/100 = 10 % for initial capital cost for course materials design and development which has to be spent before enrolling any single student for a particular course).

D = Course materials design and development costs

P = Course material production costs

T = Course delivery (teaching) costs

E = Student evaluation costs

Ua = Expenditure for personal emoluments for academic staff who involve the General Administration of the OUSL

Un = Expenditure for personal emoluments for non-academic who involve the General Administration of the OUSL

Ut = Other operating cost for General Administration of the OUSL including lands and buildings maintenance, Electricity supply, and Water supply

Fa = Expenditure for Personal emoluments for academic staff at relevant Dean's office

Fn = Expenditure for Personal emoluments for non-academic staff at relevant Dean's office

Ft = Other expenditure at relevant Dean's office

Da = Expenditure for Personal emoluments for academic staff at relevant academic department

Dn = Expenditure for Personal emoluments for non-academic staff at relevant academic department

Dt = Other expenditure at relevant academic department

Nc = Number of students registered for a particular course

Nu = Number of students registered for all courses of the OUSL for particular year

Nf = Number of students registered for the faculty in which particular course is offered

Nd = Number of students registered for the academic department in which particular course is offered

The formula consists of seventeen variables of which first four (D, P, T and E) are relevant to the direct costs and the second nine (Ua, Un, Ut, Fa, Fn, Ft, Da, Dn and Dt) are relevant to indirect costs and last four (Nc, Nu, Nf, and Nd) are relevant to number of student credits enrolled. Due to the large amount of details that has to be included in explaining how the total direct costs are calculated with the component of the direct costs categories were included in Appendix -1. It illustrates variables relevant to the costs categories of course material design and development, course material production, course delivery and student evaluation. The accumulated costs for course materials design and development, course material production and course delivery are attributed to the teaching role of conventional universities. In conventional education setup, teaching is a completely an academic role which is relatively expensive. However, the expensive academic labour could be substituted by cheap labour with the help of technology and division of labour characteristic of ODL system would be economical to a certain extent.

The significance of this costing model is to values for the Ua, Un, Ut, Fa, Fn, Ft, Da, Dn, and Dt can be obtained straight away from annual final accounts of the OUSL. Similarly values for the four Nc, Nu, Nf and Nd can be obtained straight away from student database of the OUSL. Only the values of direct costs pertinent to D, P, T, and E have to be determined by collecting data relevant to activities relevant to cost categories of course material design and development, course material production, courses delivery (teaching) and student evaluation for the particular ODL course.

The table 3 contains cost per credit relevant to eight courses of the Bachelor of Industrial Studies study programme for the year 2013 conducted by Department of Apparel and Textiles of the faculty of Engineering Technology of the OUSL. The values in the table 3 and 4 were calculated by substituting variables with empirical data of the developed formula (Eq³).

Table 3: Cost Per Credit Per Course for Different Courses of Bachelor of Industrial Studies Programme - Year 2013

Course	Number of credits	OU General administration			Faculty of Engineering Technology administration			Department of Apparel and Textiles administration			Total			
		Salary for academic staff	Salary for Non-academic staff	Other expenditure	Salary for General admin Academic staff	Salary for General admin Non academic staff	Other expenditure	Salary for academic staff	Salary for Non-academic	Other expenditure	Salary costs	Indirect costs	Direct costs	Total cost (Direct cost+ indirect cost)
TTI3238	1686	33	105	293	22	32	53	337	74	21	602	970	119	1089
TTI3239	1620	33	105	293	22	32	53	337	74	21	602	970	180	1150
TTI4238	612	33	105	293	22	32	53	337	74	21	602	970	207	1177
TTM5240	606	33	105	293	22	32	53	337	74	21	602	970	206	1176
TTX4233	630	33	105	293	22	32	53	337	74	21	602	970	288	1258
TTX5234	1344	33	105	293	22	32	53	337	74	21	602	970	173	1142
TTX6233	228	33	105	293	22	32	53	337	74	21	602	970	303	1273
TTX6239	360	33	105	293	22	32	53	337	74	21	602	970	236	1205
Average	886	33	105	293	22	32	53	337	74	22	602	970	214	1184

*** (1US \$ = 128 LKR, in year 2013)

The total cost of each course could be obtained by multiplying values of relevant number of credits and the relevant cost per credit.

It should be noted that the costs value determined in this study is quite different from that found in other study (Morgan, 2000). A comprehensive case study was worked by Brain Morgan at Marshall University (2000) which found that 16 % of the costs of distance education are attributed to technology and infra-structure and, 36% of the costs are for teaching or delivery costs, and the remaining 48% of the costs are for development. However, results of the present study values are quite different with the values of Morgan's study. The OUSL courses' costs values are 28% of the costs are attributed to technology and infra-structure, 66% of the costs are for teaching or delivery costs, and the remaining 6% of the costs are for development. Less money spent (6%) for course development at the OUSL may result higher amount of money (66%) has to be spent for course delivery. This may also lead to low pass rate of the course at the OUSL. However, the costs for technology and infrastructure are not much deviated from the Morgan study (16% and 28%).

Table 4: Percentages of Cost Per Credit for Bachelor of Industrial Studies Programme - Year 2013

	Course	Direct cost –as a percentage of total costs	In direct costs (Salaries of permanent employees of OUSL) - as a percentage of total cost	Indirect costs (Other expenses) as a percentage of total cost
1	TTI3238	11	55	34
2	TTI3239	16	52	32
3	TTI4238	18	51	31
4	TTM5240	18	51	31
5	TTX4233	23	48	29
6	TTX5234	15	53	32
7	TTX6233	24	47	29
8	TTX6239	20	50	30
	Average	18	51	31

Discussion

The developed cost estimation model refers to Eqⁿ3 is useful in calculating total costs of a course and unit cost of an ODL course such as cost per credit per course. The costs of study programme are integration of relevant courses' costs. When developing the model especially for indirect costs calculation, it is assumed that the whole resources of the OUSL including human recourse are utilized only for teaching purposes. The other outputs such as research work and national contributions done by employees of the OUSL are not considered due to the complexity of making costs calculations. If these output were included for costs calculations indirect costs of an ODL courses at OUSL would be reduced by a certain amount. The OUSL gets funds from government as the means of salaries of permanent employees and rest as course fee from students. The data in table 4, have been calculated using the Eqⁿ(3) illustrates how the incomes are utilized under different headings.

Conclusion

Findings of this study will help educational managers or decision makers to calculate total costs of an ODL study programmes adjusting different components for betterment of ODL student. Equally, the cost estimation model is useful in deciding whether it is possible or not to start a new study programme. In view of financial management, pricing of an ODL course makes it easy with the new costing model since the model provides an effective approach to calculate total costs of ODL study programme. It can be handled by an average person who does not have thorough knowledge on ODL and costing techniques. Further, the cost estimation model would be use full in forming an automated tool to calculate costs of an ODL study programme using Microsoft Excel or the other proper computer application package.

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Appendices

Appendix -1

Formula for Direct Costs of ODL Course

$$TDc = TCMDc + TCMPc + TDSc + TSEv$$

Total direct costs = Total costs for course material design and development+ Total costs for course material production + course delivery + student evaluation

Course Materials Design Costs (CMDgc)

Course materials design costs = Syllabus outline costs (80hrs. for 6 credits 40 for 3 credits) +Need Analysis costs (Preparation of the needs assessments with stakeholders = 60hrs.) + Conducting workshop (internal staffs 12 hrs. external staff 6 hrs.) + Course team meeting (16 hrs.) + Preparation of the questionnaire (10 hrs.) + Administering questionnaire (20 hrs.) + Analyzing the data collected through (30 hrs.). 174 for 6 credit course, for 3 credit course 134 (hrs.)(Hourly rate LKR 1300.00 since senior lecturer monthly salary LKR152, 000.00)

Annualized Course materials design costs for 6 credit course (CMDgc) = 0.264 x 226,200.00 = LKR 59716.80

Annualized Course materials design costs for 3 credit course (CMDgc) = 0.264 x LKR 174,200.00 = LKR 45988.80

Total Course Materials Development Costs (CMDe) = TCMDc

$$TCMDc = Anf \sum_{n=1}^k \frac{3}{2} s_n + \text{Annualized CMDgc}$$

Where,

$$Anf = 0.264$$

K = number of volume of printed materials

pVn = Price of nth printed course material

Sn = Number of sessions in nth course materials

l = session writing cost per session

Annualized CMDgc = LKR59716.80 (for 6 credit course)

Annualized CMDgc = LKR 45988.80 (for 3 credit course)

Course materials are used without any modification for at least 5 years' time period and the forgone interest for initial course material development cost is 10. % then 0.264 is applied to above formula.

Total Costs for Course Material Delivery Costs (Day School Costs)

$$TDS_c = \sum_{n=1}^j RC_n \left(vah + \frac{1}{2} ot + \frac{1}{2} wm + dch + eu \right)$$

Where

TDS_c = Total Day School costs

RC_n = nth Regional / Study Center,

Va = Hourly rate for visiting Academic

ot = Overtime rate for Clerk

h = Number of hours for day school

wm = Price of white board marker

dc = desk and chair hiring cost per hour

eu = Cost for electricity unit

Course Material Production Costs (CMP)

$$TCMP_c = \sum_{n=1}^k pV_n N$$

Where

K = number of volume of printed materials

pV_n = Price of nth printed course material

TCMP_c = Total course material production for a student

N = Number of students enrolled for a particular year

Costing Formula for Student Evaluation

$$TSE_v = (C_{cpp} + C_{cc} + C_{cpm}) n_c + C_{FPP} + C_{FC} + C_{FPM}$$

Where

C_{cpp} – Cost of CAT paper preparation

C_{cc} – Cost of CAT conducting

C_{cpm} – Cost of CAT paper marking

n_c – No of CATs

C_{FPP} – Cost of final paper preparation

C_{FC} – Cost of final exam conducting

C_{FPM} – Cost of final paper marking

$$C_{cpp} = \{C_{SMC} + (P_{CC} * n_{Rgstu})\}$$

$$C_{cc} = \{PY_{es} * n_s + PY_{ci} * n_i + OC\} n_{EC}$$

$$C_{pm} = \{P_{CS} * n_{css}\}$$

Where

C_{SMC} – Cost of setting & Moderation per CAT paper

P_{CC} – Printing cost per CAT paper

n_{Rgstu} – Number of registered students

PY_{es} – Payment for a supervisor for conducting CAT

n_s – No of supervisors for a CAT conducting Centre

PY_{ci} – Payment for an invigilator for conducting CAT

n_i – No of invigilators for conducting CAT at centre

OC – Other costs

n_{ec} – Number of CAT conducted centres

P_{cs} – Payment per CAT answer script

n_{css} – No of students sat for CAT

$$C_{FPP} = \{C_{SMF} + (P_{CF} * n_{ELstu})\}$$

$$C_{FC} = \{PY_{FS} * n_s + PY_{Fi} * n_i + OC\} n_{EC}$$

$$C_{FPM} = \{P_{FC} * n_{FSS}\}$$

Where,

C_{SMF} – Cost of setting & moderation per final paper

P_{CF} – printing cost per final paper

n_{ELstu} – No of eligible students

- PY_{Fs} – Payment for a supervisor for conducting Final examination
 n_{Fs} – No of supervisors for conducting Final examination
 PY_{Fi} – Payment for an invigilator for conducting CAT
 n_{Fi} – No of Invigilators for a final examination conducting for a Centre
 OC – Other costs for final examination
 n_{ec} – No of examination centres
 P_{FC} – Payment for final answer script (per script)
 n_{FSS} – No of student sat for final examination

Appendix -2

Table 5: Template Used to Collect Enrolled Student Credit Distribution for an Academic Year

Faculty	Department	No of Student Credits
Faculty of Natural Science	Chemistry	
	Botany	
	Zoology	
	Physics	
	Mathematics and Computer Science	
	Health Science	
Total credit count of Faculty of Natural Science		
Faculty of Engineering Technology	Civil Engineering	
	Mechanical Engineering	
	Electrical & Computer Engineering	
	Mathematics & Philosophy of Engineering	
	Textile & Apparel Technology	
	Agricultural & Plantation Engineering	
Total credit count of Faculty of Engineering Technology		
Faculty of Education	Secondary & Tertiary Education	
	Early Childhood & Primary Education	
	Special Needs Education	
Total credit count of Faculty of Education		
Faculty of Humanities and Social Science		
	Legal Studies	
	Management Studies	
	Language Studies	
Total credit count of Faculty of Humanities and Social Science		
Total credit count of the university		

THE EFFECTIVENESS OF BLENDED LEARNING ON THE FULL BLOCK TUTORIAL MODEL TO PROFESSIONAL COMPETENCE IMPROVEMENT

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Abstract

This research is a follow up from the research result in 2013 gave the supervisory model for Professional Competence Improvement (PCI) subject with full block tutorial model in Nias Island and this model was assessed as adequate by designer instructional experts. The aim of this study was to analyze the effectiveness of the blended learning model on the block tutorial system towards PCI. The effectiveness was analyzed in terms of: 1) The time aspect 2) Qualification of the Supervisors 3) Roles and functions of Supervisors 4) Subject matter course category chosen 5) evaluation aspect. Survey method was implemented in this research. Data was collected through 14 questionnaires which were distributed to 14 Supervisor I, 33 to Supervisor II, and 391 to students, which was conducted in Nias Island, North Sumatera. The survey was conducted on the first semester of 2014. The data were obtained from questioners documentation, and interviews, using various modes such as: e - mail, sort messages, phone, and mail. The results showed that the full block tutorial model by using blended learning system was considered effective by the majority of the respondents. The effectiveness of the full block tutorial model was analyzed by several perspectives such as: the Supervisor I, II and students viewed from the aspect of time (76%), aspects of the Supervisor I and II (academic qualification, position, teaching experiences, tutoring experiences, number of supervised students, workload (85%), aspects of the role, functions, and duties of Supervisor I (79%), in the aspect of subject matter course category chosen (100%), aspects of evaluation (77%).

Keywords: *Blended Learning System, Full Block Tutorial Model, Professional Competence Improvement, Classroom Action Research Course. Medan Regional Office*

Introduction

Universitas Terbuka (UT), as one of the distance learning higher institutions promotes independence in learning to its students including to those students of the Elementary Teacher Program (SI-PGSD). For them, UT provides compulsory face-to-face tutorial and online tutorial for several courses. Face-to-face tutorial conducted for the students of Elementary Teacher Program is for subject to Professional Competence Improvement (PCI) in Medan Regional Office. The implementation of face-to-face tutorial student of Elementary Teacher Program at Medan Regional Office consist of three models, such as: 1) *Regular System*, With the regular system, face-to-face tutorial is conducted in eight weekly meetings, two hours per meeting. 2) *Semi Block System*, the tutorial is conducted in four weekly meetings, each meeting takes four hours, and 3) *Block System* tutorial is conducted in one week duration. The Block System face-to-face tutorial in Medan Regional Office has been implemented only for the students in West Nias Islands since semester 2005. Determination of this pattern in terms of mileage and affordability of Medan Regional Office to the location of the tutorial. Nias Island, is one of the locations tutorial Study Group which is under the auspices of Medan Regional Office. Away geographic location and long mileage and require huge costs, the reason Study Group in Nias conducted with face-to-face Blocks System. Considering the importance of the supervision of PCI students and its report writing, the researcher was intended to know how the PCI Block System tutorial supervision and the report writing were conducted in Nias Islands, especially in West Nias Islands.

Based on the researcher's preliminary observation, the previous implementation of the supervision and the report writing which applied the Block System tutorial was not effective. In line with the importance of achieving PCI objectives as well as UT's efforts to enhance the teacher student quality and professionalism, the researcher proposes that the previous teaching practice supervision and the report writing which was conducted for only a week which used the Block System tutorial in tutorial centers ignored the important practicing processes in making teaching plans, in improving the teaching-learning processes, in reflecting the teaching-learning processes, and in reporting the remedial teaching-learning processes, in accordance with the PCI Manuals. Therefore, attempts must be made to improve the approach, method, and strategy of the supervision so that the students would have sufficient time for practicing processes at their own classes, as well as sufficient guidance in writing the report that appropriately apply the manuals. One of the attempts conducted was by developing a new PCI supervision model which would enhance the teachers' professional competencies. It is expected that this model will facilitate the students with more real experiences in practice under the supervision of competent supervisors. In addition, this model would enable students to obtain necessary teaching competence and sufficient time for completing the report. By this way, they would be able to achieve the PCI objectives, i.e. becoming competent and professional teachers. This research is focused on the effectiveness of Blended Learning Model on The Block Tutorial System to Professional Competence Improvement.

Review of the Literature

1. Face-to-face Tutorial in Medan Regional Office

Basically, face-to-face tutorial is an academic learning support service for Universitas Terbuka (UT) students. In tutorial, the student learning activities are supervised by a tutor as a facilitator. In tutorial, the students and the tutor review and discuss materials in which students find difficulties or they find it important. Specifically, the materials or topics discussed in tutorial may include: (1) important competences or concepts in a subject/course, (2) students' problems in learning the textbook materials, (3) matters in relation to students' performance (in practice/practicum) inside and outside tutorial classroom, and/or (4) the application of knowledge or theory in daily practice. There are several types of tutorial such as face-to-face tutorial, online tutorial, radio broadcast tutorial, television broadcast tutorial, and correspondence tutorial (Catalogue UT, 2013). As for courses with practice or practicum, the tutorials should be conducted under the supervision of an instructor/supervisor/counselor, and it can be conducted individually or in groups by using such facilities as kit, dry lab (www.ut.ac.id), or nearby laboratory. Professional Competence Improvement (PCI) is one of the "practice courses" It is one of the important courses for the students for Elementary Teacher Programs.

According to UT Catalogue of 2013 for Elementary Teacher Programs, PCI is intended to allow the students S1 PGSD Program to acquire the classroom-related problem-solving skills in five major subjects by applying classroom action research principles in attempts to improve the teaching-learning quality. To acquire such a competency, the students are required to review the teaching-learning concepts integrative, to refer to guidelines in planning and conducting lessons and classroom action research, to practice finding problems and to analyze problems, and to plan remedial actions by designing it in an improved lesson plan, to conduct the remedial teaching, to self-assess or to learn feedback of others about the conducted plan and teaching practice as data for constructing the next cycle of improvement plans of the teaching-learning process, and to write a report on the improved teaching learning process. To meet PCI objectives, according to PCI Manuals, the following topics should be discussed: (1) concept of PCI, definition of PCI, objectives and significances of PCI, the relationship of PCI and Teaching Competence Improvement, learning experiences, training procedures, assessment, PCI course learning materials. (2) Administration of PCI, which includes the administration of PCI and involved personnel, PCI implementation procedures, PCI assessment method, and PCI management flowchart. The student's achievement to meet PCI objectives is

measured by a performance test in remedial teaching practice and a final remedial teaching report. PCI supervision is conducted under the supervision of Supervisor 1 and Supervisor 2. Supervisor 1 is a Lecturer from University in Medan. Supervisor 2 is an elementary school headmaster or a senior teacher who has been certified, or an elementary school district supervisor, preferably one who holds S1 (bachelor) degree. The block system tutorial with one week duration is used in West Nias Islands due to the geographical reason. The remote location of Nias Islands can be reached by plane or boat in 24 hours from the mainland. However, regular flying to Nias is not economical considering the number of the tutors. A great amount of money is needed for eight times flying trips in block system or four times flying trips in semi block system.

2. Development Model of Professional Competence Improvement Course Using Full Block System Tutorial

To obtain professional teachers, as stated objectives of Professional Competence Improvement (PCI) elementary teacher students of S1 PGSD are guided and trained by supervisors to design lesson plan, to conduct remedial teaching based on the teacher's reflection, and to solve problems related to their main duties as teachers, such as to manage learning-teaching activities in a broad sense. The supervisor-student composition is one Supervisor for 15 students, whereas one Supervisor 2 guides 5 students. The supervision by supervisor 1 and 2 currently using the Block System in Nias Islands is conducted face-to-face in one-week duration in tutorial centers. The implementation of the Block System PCI course supervision fits the scheme issued by Universitas Terbuka (UT) for all study clubs in Nias Islands. However, the implementation is, in fact, not fully applicable, especially West Nias Island, because the supervision by Supervisor 2 cannot be conducted in a week duration, meanwhile supervision is also conducted by Supervisor 1 at the same time. To solve this problem, this PCI supervision model is a necessary attempt to fit the local condition and to achieve the course objectives. Although the supervision model should refer to the manuals issued by UT, the implementation of the model in the tutorial centers was not conducted in one-week duration, as compared to those supervisions of other courses which use the block system. Some additional time should be allocated for the PCI supervision and distance supervision through mail, email, sort messages, and phone communication was the chosen mode. Distance supervision of PCI has been started for 5 weeks before the formally scheduled opening date of the tutorials and supervision at tutorial centers. A week before the supervision, the data of supervisor 1 and 2 were collected including phone numbers and e-mail addresses. The data of Supervisor 1 were obtained from Medan Regional Office, while the data of Supervisor 2 were collected from the Local Tutorial Administrator based on the stated criteria. Next, students are divided into classes which will be supervised by Supervisor 2 and Supervisor 1. When Supervisor 1 and 2 has been assigned; the name, phone number, and email address of Supervisor 1 is informed to the local administrator who will forward them to the students. Data collection of Supervisor 1 and Supervisor 2, student classes, and confirmation of supervisor's data to students are conducted in a week. Therefore, distance supervision can be started 4 weeks before the face-to-face tutorials. This way, when the supervisor comes to supervise on location, the students would have had the material for discussion as well as for PCI report writing. Besides, at the same time Supervisor 2 will be able to start guiding and supervising the students in designing the teaching plans and observing the teaching practice by the students. Supervisor 2 writes observation notes in a journal which will be submitted to Supervisor 1. As a result, Supervisor 1 will be able to monitor his/her students' progress. This one-week supervision allows students not only to have sufficient feedback for PCI report writing but it also provides sufficient time for conducting remedial teaching practice according to the teaching plan and based on classroom action research principles. Therefore, one-week face-to-face supervision, as applied to other courses without practice, is very difficult to implement. It is even unlikely to achieve the stated course objectives. Furthermore, after intensive supervision for one week duration in the tutorial center, supervision is continued with another 4 weeks up to the time when the students finish writing the PCI report. Professional Competence Improvement supervision model is done by providing distance guidance before and after the face-to-face supervision at the tutorial center through mail, phone, SMS, and email communication. By combining the distance and the face-to-face PCI supervision modes, the

supervision becomes more efficient and more effective. It is expected that this combination gives impact on the improved skills and professionalism of the graduates (Said, A.2013).

Results and Discussion

The purpose of this study is to look at the effectiveness of the application of a Block System in terms of several aspects, namely time, the Supervisor I and II, the role and function of the Supervisor, the burden of subjects and assessment. After doing a questionnaire to all the samples, then the next thing is to analyze the data. Here are the results of the research will be outlined based on the following aspects, Time, Supervisor, Subjects, and Assessment.

1. Time aspect

Basically coaching activities PCI system block Nias Island has a variety of time in practice, as follows:

Table 1.1: Mentoring Activities Professional Competence Improvement in Time Aspects

No.	Time of Implementation	Supervision Activities
1	5 (five) weeks before D-day coaching schedule block system	<ul style="list-style-type: none"> To set supervisor 1 and 2 according to the number of students based on predetermined criteria Orientation implementation to Supervisor 1 at Medan Regional Office Orientation implementation to supervisor 2 and student of supervision participants by MedanRegional Office
2	4 (four) weeks before D-day coaching as scheduled by the Supervisor system block	<ul style="list-style-type: none"> Tutoring practice learning improvement ingrade students taught by Supervisor 2: <p>Task Supervisor 2 on PCI:</p> <ul style="list-style-type: none"> Guiding students in schools where teaching related to PCI tasks to be done Provide input to the lesson plan repair prepared students Provide feedback on teacher performance during practice learning improvement <p>Helping students to reflect:</p> <ul style="list-style-type: none"> Keep a journal / report activities with students (all activities carried out by the student and the supervisor 2 as: Planning of Classroom Action Research, Lesson Plan, Lesson Plan Repair Cycle 1, Reflection, Observation sheet, Written in journal)
3	4 (four) weeks before D-day coaching schedule block system	<p>Supervisor 1 and 2, as well as the students do</p> <ul style="list-style-type: none"> contacts, activities remotely guiding takes place via Phone / Mobile, SMS, and e-mail.
4	30 minutes on the day before at the start coaching activities	<p>Supervisor 2 convey journal / report activities with students, to supervisor 1</p>

5	Today H coaching (1 week) at the location Study Club	<ul style="list-style-type: none"> Guidance statements in accordance journal by Supervisors 1PCI Implementation of PCI practice exam
6	3 weeks after D-Day Tutoring schedule block system	<ul style="list-style-type: none"> Continued supervising the preparation of the report PCI with remotely by the Supervisor 1 (via phone / mobile, SMS, e-mail and postal)
7	One week before the UAS	<ul style="list-style-type: none"> Accomplishing PCI report for 1 (one) subjects (exact or non-exact or thematic) Students submit a report to the Supervisor 1PCI through Post Office, to further after corrected and signed, Supervisor 1 handed Medan Regional Office, a report accompanied by a CD (soft copy).

Distribution of Questionnaire Related Aspects of Time

Based on the guidelines for the implementation of mentoring activities PCI system block on Nias Island, then it is in line with the results of the analysis of data collected in the distribution of the questionnaire are summarized in Table 1.2 below:

Table 1.2: Distribution of Questionnaire Related Aspects of Time

No	Statement	Answer	Information
1.	Supervisor 1 Conducting coaching with students prior to face-to-face	66%	3 weeks
2.	Supervisor 2 Conducting coaching with students prior to face-to-face	72%	3 weeks
3.	The time required to complete the PCI report	90%	4 weeks

Based on Table 1.2 above shows that the implementation of the concession agreement with the guidance system on the island of Nias effective block from the aspect of time with the total time guidance and completion reports PCI is 8 weeks (3 weeks with the guidance of a Supervisor 1 and 2 before the face-to-face, one-week face-to-face counseling with Supervisor 1, 4 weeks of completion of the report). This means to have in common with a total time guidance PCI held regularly. However, there are still about 28-34% Supervisor 1 and 2 stated before-face coaching is less than 3 weeks, this is due to the students who are less active contact the Supervisor and the reason of the long distance between students and Supervisors 2 specifically.

2. Qualification of the Supervisors

Determination of supervisors determined by qualification standards established by the Open University, the qualification is:

Principal / senior teacher who has obtained a certificate educator / Supervisor Elementary School b) Educational backgrounds. Based on the prescribed qualifying which then drives the implementation of the application of coaching activities PCI system block on Nias Island, then it is in line with the results of the analysis of data collected in the distribution of the questionnaire are summarized in Table below:

Table 2.1: Distribution Supervisor Questionnaire Related Aspects 1 and 2

No	Statement	Answer	Information
1.	Graduated Supervisor 1	100%	S2 and S3
2.	Experience Supervisor 1 becomes Tutor PCI	78%	> 5 years old
3.	Work Supervisor 1	65%	lecture
4.	Graduated Supervisor 2	80%	S1 education
5.	Experience Supervisor 1, Supervisor2	87%	>8 years old
6.	The number of students guided by Supervisor 1	96%	average 15 Student
7.	The number of students guided by Supervisor 2	89%	average 5 Student

Based on Table 2.1 above shows that the entire Supervisor 1 were recruited from professors or teachers College Senior Secondary School Medan is a graduate S2 or S3 with 78% of them have the experience to guide the course of PCI more than 5 years and 65% of lecturers . 87% of the Supervisor 1 and 2 have a teaching experience of more than 8 years. And in the ratio of 1 supervisor coaching conducted revealed 96% guiding average of 15 students, while the other 4% are less than 15 students. To the ratio of 2 coaching supervisor stated 89% guiding average 5 students, while another 11% are guided more than 6 students.

Based on the above findings, it was stated that guiding the PCI system in aspects Supervisor blocks system 1 and 2, are very effective. This is evidenced by an average of more than 85% qualified Supervisor 1 and 2 in accordance with the guidelines for the implementation of Supervision PCI Open University courses.

3. Role and Functions of Supervisors

Basically, the application of the PCI system of supervision activities on the island of Nias block inseparable linked with the role, functions and duties of each supervisor. Where the Supervisor 1 guide students in arranging report PCI and examining PCI practices. Supervisor 1 who was in town Medan Regional Office not only guide in the current location of face-to-face guidance, but also lead to the distance before D-day face-to-face counseling, and thereafter, using communication media telephone / mobile, SMS, e mail, facsimile and Post. Meanwhile, the role and functions of Supervisor 2, expanded to be responsible for the implementation of the Classroom Action Research did students in their school. Supervisor 2 plays a role not only assess the implementation of the Classroom Action Research, but also serves as a mediator as well as giving information on the progress of implementation of the Classroom Action Research students to the Supervisor 1. And the journal that contains the activities of supervision by Supervisors 2 submitted to the supervisor when the Supervisor first one was on site coaching, before Supervisor 1 start-face guidance. The following job descriptions, roles, and functions at each supervisor as follows:

Table 3.1: Role and Functions of the Supervisor

No	Aspect	Tutoring System Block	Information
1	Assignment Supervisor 1	<ul style="list-style-type: none"> Guiding students for 8 sessions, within 1 (one) week. Guidance remotely 4 weeks before D-day coaching and 4 weeks after coaching face to face. 	<p>In accordance Guide PCI2007</p> <p>Guidance remotely via SMS, phone / HP, and e-mail.</p>
2	Preparation of The Journal	Supervisor 2 was done	Pour all the activities carried out by the student and Supervisor 2 (Planning of Classroom Action Research, Lesson Plan Repair Cycle1, Reflection, Observation sheets, etc.)
3	Tutoring improvement practices in the classroom to teach students	Supervisor 2 was Tutoring already underway 4 week before implementation guidance on D-day face-to-face.	<p>Supervisor 2 task on PCI:</p> <ul style="list-style-type: none"> Guiding students in schools where teaching related to PCI tasks to be done Provide inputs to the Lesson Plan Repair prepared students Provide feedback on teacher performance during practice learning improvement Helping students do reflection Keep a journal / report activities with students
4	Implements of the practice of the learning improvement	<ul style="list-style-type: none"> For 1 (one) subjects (exact or non-exact or thematic) Do 2 to 3 cycles 	<p>Supervisor 2 coordinate with Supervisor 1</p> <p>(via remote, with phone / mobile, SMS, and e-mail)</p>
5	Practice learning improvement assessed	Only 1 (one) time (exact or non-exact or thematic), conducted in the vicinity of the school or classroom coaching tutorials	Performed at the time of the day coaching, when the Supervisor 1 has been at the location of the tutorial (for Supervisor 1 as testers 1)
6	Instructional improvement practice report	<p>For 1 (one) subjects (exact or non-exact or thematic)</p> <ul style="list-style-type: none"> Preparation of the report was forwarded Tutoring 4 minggu-face after the implementation of the guidance on the day. 	<ul style="list-style-type: none"> Students must collect the soft copy in CD supplied together with the report The report sent by the students through the post to the Supervisor 1 to be signed, then the report submitted to Medan Regional Office

Related Aspects of Tasks, Functions, and Role of the Supervisor

Based on the roles, functions and tasks that have been assigned a supervisor who then conducting coaching PCI System Block on Nias Island, then it is in line with the results of the analysis of data collected in the distribution of the questionnaire are summarized in Table 5.below:

Table 3.2: Distribution of Questionnaire Related Aspects of Tasks, Functions, and Role of the Supervisor

No	Statement	Answer	Information
1.	Coaching distance with Supervisor 1	90%	communicative
2.	The Way communication to Supervisor 1 via Mobile / SMS	92%	
3.	The Way communication to Supervisor 1 via Email	5%	
4.	The Way communication to Supervisor 1 via POS	3%	
5.	Supervisor 1 reviews identification problems	92%	
6.	Supervisor 1 reviews the analysis and formulate the problem	92%	
7.	Supervisor 1 reviews Lesson Plan Repair	89%	
8.	Supervisor 1 reviews preparation of the questionnaire / guidelines for observation	85%	
9.	Supervisor 1 reviews Teacher Performance Plus and 2 Teacher Performance Plus	78%	
10.	PCI statements in accordance with the format and systematic reporting applicable	98%	
11.	Supervisor 2 provides assistance in the implementation of the Classroom Action Research are implemented students	77%	average 3 times
12.	Supervisor 2 evaluates Teacher Performance assessment 1 and 2 Plus and discussed with students	78%	
13.	Supervisor 2 implementing guidance in the preparation of the instrument / student observation sheet	75%	

Based on Table 5 above shows that 90% of students with remote coaching Supervisor 1, and established communication via phone and sms number of 92%, and communicate via email only 5%, and through Post Office there are only 3% . While 10% of students do not do long distance coaching, by giving specific reasons-reasons. Tasks, roles and functions of Supervisor 1 has generally been implemented well, this is evidenced by the findings of the implementation of the tasks performed achieve an average above 80%. With details, Supervisor 1 reviewed problem identification, analysis, and formulation of the problem that has been carried out along the Supervisor 2 students reach each number of 92%. While Lesson Plan improvement rate was 89%, reviewed in the preparation of the questionnaire / guidelines for observation as much as 85%, reviewed Teacher Performance 1 Plus and 2 Plus have reached 78%, and arranging the reporting of PCI based on format and systematics applied in UT have reached 98%.

Furthermore, duties, functions and role of the Supervisor 2 also stated a good. This is described by the data findings explaining that Supervisor 2 provides assistance in the implementation of the Classroom Action Research practices in which students reached 77%. Supervisor 2 has performed with a mean number of 3 times. Another 23% only 2 times even there only 1 time execution only. While in the assessment of student Classroom Action Research practice, as much as 78% Supervisor 2 to assess and Teacher Performance1 and Teacher Performance 2 discuss the results with students. As well as in

the preparation of the instrument / observation guide students have also been carried out by Supervisor 2 with the findings of 75%.

Based on these data, it is clear that the role, functions and duties of each Supervisor1 and Supervisor 2 in coaching activities PCI system blocks in Nias have effective implementation of good value. Each supervisor has been carrying out the duties, functions, roles that are part of the coaching PCI, although there are still some shortcomings conducted by Supervisor 1 and Supervisor 2 in the implementation.

4. Subject Matter Course Category Chosen

During the conduct of supervision activities PCI System Block on Nias Island, students are required to be creative in taking action research and the preparation of the report. In this case, students only choose one subject. Both areas of a science or non-exact or may also choose thematic. Based on the load aspect of subjects, the results of the analysis of data collected in the distribution of the questionnaire are summarized in Table 6 below.

Table 4.1: Distribution of Burden Questionnaire Related Aspects Subjects

No	Statement	Answer	Information
1.	Subject to the reporting burden PCI	100%	1 lesson
2.	Percentage of students who chose the field of exact	50%	
3.	Percentage of students who chose the field of non-exact	50%	
4.	Percentage of students who choose a thematic	0 %	

Based on Table 6 above shows that 100% load on the student subjects PCI report only one subject. While in each group as a whole has a ratio of 50% choose the exact subjects, and 50% other non-exact search fields. This indeed has been governed by the UT as well as regional manager in the division of a group of subjects for students, however, in finding no students who choose thematic in their PCI. Statements presented as thematic somewhat difficult in practice and preparation of the Classroom Action Research, based on these descriptions, it can be stated that the mentoring aspect of the burden of PCI in subjects proved to be effective.

5. Evaluation Aspect

PCI assessment system course consists of two systems: 50% practical and 50% learning improvement report. As for the practical value of learning improvement of 30% and 70% student participation practice learning improvement.

Based on the above, the results of the analysis of data collected in the distribution of the questionnaire are summarized in Table 5.1below:

Table 5.1: Distribution Related Aspects of Assessment Questionnaire

No	Statement	Answer	Information
1.	Understanding Supervisor 1 on assessment guidelines	75%	Enough to understand
2.	Supervisor 1 provides an assessment of student participation in the determination of the final assessment of the course PCI	78%	Supervisor 1 completes the assessment sheet

Based on Table 5.1 above shows that there is still a 25% Supervisor 1 coaching assessment guidelines do not understand the latest PCI. Evidence from the findings showed that only 75% of Supervisor 1 understood the newest evaluation guideline for PCI supervision. Giving value of student participation in supervision is 78%.

There were still 23% who had not valued the participation of students' supervision in final assessment of PCI subject. From these data, it turns out there who do not understand the Supervisor 1 with both the latest PCI assessment process. This needs to get the attention of Medan Regional Office as should all Supervisor 1 truly understand aspects of this assessment, especially the value of practice given by the Supervisor 1. Subject PCI has practical value and reports, and the final value will not be processed if one of the values does not exist. Nevertheless, the implementation of PCI in aspects of assessment guidance became effective, since 78% Supervisor 1 can understand and provide an assessment of PCI practices. In order not to cause harm and the case value, should all be able to understand the appraiser Supervisor 1 PCI.

Research Findings

Implementation of this research takes time for 3 months in the implementation, the implementation throughout the research team found a few things that can support the research. These will be elaborated as follows:

1. There are some students who still do not maximize time coaching PCI, both before and after the face-to-face tutorials in progress.
2. There are still students who do not perform communication / coaching distance to the Supervisor 1 or Supervisor 2 with a variety of reasons.
3. More long-distance mentoring done by the students to Supervisor 1 via phone and SMS.
4. None of the students in implementing Classroom Action Research Course using thematic learning.
5. In practice Classroom Action Research Course in school mentoring students, still found Supervisor 2 which does not accompany students.
6. In the assessment under student observation sheet were conducted Supervisor 2 is not exhaustive. As well as in the preparation of instruments / student observation sheet is still not comprehensive.
7. There is still a Supervisor 1 do not understand PCI assessment guidelines.

Not all Supervisor 1 gives assessment of student participation in the determination of the final value of the course PCI.

Based on the above research findings, there needs to be more in-depth assessment and focused on weaknesses. These findings can be recommended to carry out an evaluation for the management and implementation of further research.

Discussion

Instructional patterns on PCI supervision with Block System in Nias Island is really applying Hybrid Learning or Blended Learning, these two concepts are the same and interchangeable, which combine an instructional strategy by using face-to-face (by teacher) and technology-based learning by using the computer media (offline and online / internet network), mobile phone or iPhone, satellite television channels, video conferencing, and other electronic media. Hybrid Learning or Blended Learning that uses two approaches, such as: face to face and e-learning. The combination of both approaches is needed for the effectiveness and efficiency of learners. (Suparman, 2014). Lining with the argument, Thorne (2003) describe the Blended Learning as *"It represents an opportunity to integrate the innovative and technological advances Offered by online learning with the interaction and participation offered in the best of traditional learning."* With patterns Blended Learning students and tutors are required to actively and learning to master the technology in order to be effective. For the students and tutors who did not master the technology will be encouraged to learn the technology. this is consistent with the results of research conducted by Gu'lsen, Ug'urlu, Ersoy, Nutku (2005) that blended learning triggers the need for students to learning in the classroom, students are familiar with and master the technology is better at absorbing learning than other students, and students are more satisfied with the learning model of blended learning than traditional learning models. Combination of these two patterns will directly create the learning situation with unlimited space and time. Then in this PCI supervision has been designed its time frequency for student supervision before and after face-to-face tutorial to produce the quality learning and PCI. But in field, there are students still not using the time offered frequency. The reason for not using the time frequency is mileage. Both students mileage with Supervisor 1 (because some student are living at isolated island in Nias Island), climate or natural constraints such as erosion, flooding because raining heavily, storm/sea wave which cannot send the student to meet Supervisor 2. These are also as a reason for Supervisor 2 cannot visit to student's schools in supervision for Classroom Action Research at their school locations. Distance communication is often not conducted by Supervisor 1 because bad signal for Phone Cell and bad facilities in student's location. Student's capability in understanding the explanation of Supervisor 1 is low, although the communication can be related well.

Tutoring is done remotely more students still use the HP and SMS facilities. Web-based coaching is relatively very small. This is because internet facilities are still lacking in the area of residence of students. The facilities are widely available only in the capital district and the district capital alone, as well as the bandwidth is often disturbed even weaker. These are the reasons set forth guiding students in research effectiveness in implementing Classroom Action Research Course. Whereas, done by the students, no one is using thematic learning. This is because students feel planning and implementation of Classroom Action Research with thematic somewhat difficult, as well as the ability of Supervisor 2 is still weak and designing and implementing thematic in Classroom Action Research Course. Another weakness, the findings contained in the mentoring is done in practice Classroom Research Course Supervisor 2 students also experience weakness. It reveals that not all Supervisor 2 PCI assessment use the instrument for Evaluating Teaching Performance, as well as the preparation of instrument / observation sheet used in the implementation of the Classroom Action Research. It is influenced by factors of understanding and mastery Supervisor 2 in the theory and practice of action research. Another reason is also because of a hurry, and so surrender completely to the students who should be guided. The treatment is, of course, result in the quality of students' PCI was low. Not to mention the end of the course PCI assessment conducted by Supervisor 1 still exist that use guidelines old. The assessment of Supervisor 1 do not understand the end of the concession agreement with the assessment guidelines provide student participation in coaching assessment PCI. This of course will lead to the final outcome PCI not optimal. There is no difference for students who diligently coaching and who are not diligent in coaching.

However, departing from the overall findings in achieved in this study, 95% of respondents said the coaching system very well and should be maintained by continuing to make improvements based on the findings of weaknesses / deficiencies occurred. This system is believed to be very good compared patterns long and is in accordance with the conditions in the field. Suggestions in this coaching, proposed by Supervisor 2 need no additional time face to face, and intensive communication between Supervisor 2 with Supervisor 1 so that the practices were not experienced the fatal mistakes. While the suggestions raised by Supervisor 1, more in need of particular concern to choose Supervisor 2 with the qualifications of knowledge and experience in the Classroom Action Research. It is often an obstacle to the implementation and reporting of Classroom Action Research.

Summary

Based on the above results, it can be concluded as follows:

Model guidance PCI system in Nias block in the aspect of time is declared effective, with a total time of guidance and completion reports PCI is 8 weeks (3 weeks with the guidance of a supervisor 1 and 2 before the face-to-face, one-week face-to-face with the guidance of a supervisor 1, 4 weeks completion report). This means to have in common with a total time guidance PCI held regularly.

Model guidance PCI system in Nias block the supervisor aspect I and II declared effective, because it has met the requirements of the academic aspect as a lecturer and senior high school teachers who have qualified for the supervisor S2 1 and has experience as a supervisor of more than 5 years. Meanwhile, the supervisor 2 can carry out coaching with guided manual PCI well.

Model guidance PCI system in Nias block in the aspects of the role, functions, and duties of supervisors declared effective, because the supervisor can understand the duties and functions well, where the coaching done by the system remotely via phone, SMS, and electronic mail (email) before D-day coaching and thereafter.

Model guidance PCI system in Nias block the burden aspect of subjects declared effective, students only choose one subject both fields of exact sciences or non-exact, or thematic fit the guidelines contained in the guide books.

Model guidance PCI system in Nias block the assessment aspect is declared effective, because most of Supervisor 1 is already understand the procedures for PCI assessment, especially in the practice and coaching process conducted Supervisor 1 although there are changes with the old grading system.

Based on the results and conclusions of research on the above, the suggestions in this research is to improve the weaknesses of the model role in guiding the PCI system in Nias block adapted to conditions on the ground. And can perform advanced research, especially with the difficulty faced by students and supervisors to communicate to discuss the issues in coaching with the PCI signal constrained communication tool when using the HP / SMS and the network when using email.

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HIGHLY INTERACTIVE INTERNET-BASED TUTORIAL SUPPORT SYSTEM (HIITS²): A CONCEPTUAL MODEL

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Abstract

Online learning-teaching paradigm and pedagogy is evolving at an astonishing rate during the last decade. Students of an online course no longer rely on the traditional face to face classroom for knowledge and information as they are just a click away. Learning in this century has become more collaborative, contextual and active. Therefore, we can find many types of online learning styles and methods developed and used by educators all over the world. They had identified objectives, structural lesson plans and strategies to support online learning. Advancement of technology has introduced many new tools and application which can be used to enhance the online learning experience. The current model of supporting small classes in Wawasan Open University is through web conferencing software called WizIQ. The setting of this model is rigid in terms of the tutorial schedule planned at the beginning of the semester. Students were passive in the tutorial and the Learning Management System (LMS) had a very low participation in the teaching/learning process. The attendance of the tutorial was relatively very poor. There was a serious lack of students engagement in the current WizIQ course presentation. Consequently, a new approach in conducting two courses related to computing is being introduced and it is identified as Highly Interactive Internet-based Tutorial Support (HIITS²) model. In this model, the interactive blended learning through tutorial support will be the focus of the course presentation. The objective of the HIITS² is to actively engage student in the process of teaching and learning and thus, improve the course presentation as well as the achievement of the learning outcomes. This paper presents the case study of a new approach combining collaborative tools such as Learning Management System (LMS), WizIQ and Whatsapp and existing online learning strategies to provide a new support system that allows a far higher participation between students and tutor at anytime and from anywhere. A conceptual model derived from this case is explained. This paper covered the detail features of this model that include the criteria of the tutorial setting, the class strategy, course planning and organization and tutorial monitoring.

I. Introduction

Open Distance Learning (ODL) is rising to become an educational delivery model which is cost effective while maintaining its quality and furthermore increasing participation of students in higher education (Pityana, 2009). Although there is a separation of space and time between the learner and their facilitator in the ODL mode, the current technology that we have can be used to reduce that gap and make their learning experience more effective and valuable within their work environments. This brings us to the responsibilities of an ODL institution.

As one of the pioneer ODL educational institution in Malaysia, Wawasan Open University (WOU) strives to cater to the needs of working adults who are seeking to improve themselves and to also instil lifelong learning into their daily life. The most important concern that needs to be addressed is to provide flexible learning opportunities with guidelines and assistance. This must include a proper learning content; delivering the content; and space for participants to discuss further on the content.

WOU's mode of delivering the course materials is through the LMS which is referred to as *WawasanLearn*. Initially, the *WawasanLearn* is used as the main platform for students to get their materials; interact with peers and facilitators; and to be notified of updates related to their courses and news from WOU. Two hours of face to face tutorial sessions are conducted once a month for five times which is a total of 10 hours a semester. The Course Coordinator (CC) is the person responsible for coordinating the development of the course materials and content before the start of the semester. The CC is also responsible in selecting a suitable candidate to be assigned as the facilitator for the course who is also referred to as the tutor.

Course materials and other learning contents can be shared and posted on technologies such as the Learning Management System (LMS), Dropbox and emails. This makes accessing their instructions more convenient and hassle free.

Mode of delivering the content does not solely depend on the traditional face to face classroom but can also be executed online through the virtual learning environment (VLE) using many online or cloud based learning platform which is presently available such as WizIQ, Adobe Connect and many more. This allows students the flexibility to arrange their study time with their facilitator at their most convenient time. Therefore, permitting students to learn at their own pace and within the comforts of their home, library or any place which the students deem fit for learning.

Students' participation should be through modes that are diverse and easily accessible such as via mobile phones so that students can receive and post instructions conveniently. If students are using the LMS discussion tread for this, then there would be a slight inconvenience because students will first need to find a desktop as it is not available on mobile at the moment. Then they would have to log into the LMS in order to read and post. However, with the use of social mobile networks such as Whatsapp, students can receive synchronous posting and feedback from peers and facilitators without having the need to log in multiple times, which is convenient and saves time.

II. Literature Review

In our attempt to provide a better understanding to have an alternative approach to engage learners in an ODL environment, we carried out comparative study in areas of online pedagogy, learning models, interactive learning and interactivity which will shape the general idea on the existing ODL models used in an online learning paradigm.

Our main discussion here would be on how we could improve the online pedagogy effectively by employing the following three principles (Pelz, 2004):

The first principle "*Let the students do (most of) the work*" is supported based on each and every one of the following items which were discussed in details by Pelz (2004), student led discussions, students find and discuss web recourses, students help each other learn (peer assistance), students grade their own homework assignments and case study analysis.

The next principle is "*Interactivity is the heart and soul of effective asynchronous learning*" which explore the unique propensities when students interact with educators in various ways. The component, interactivity is what differentiates an effective online course from a high-tech correspondence course. Besides the face-to-face interactivity, the threaded asynchronous interactivity is also great to work with. Comparing with the traditional classroom, where interaction requires listening and talking, meanwhile the online interactivity requires reading and writing.

The last principle, “*Strive for presence*” is based on the following:

- (a) *Social Presence* happens when learners not only participates in the online course but also create a learning community by portraying their personal characteristics into the discussion.
- (b) *Cognitive Presence* happens when the tutor and students have meaningful discussion in the online community to be able to construct and confirm meaning of topics in discussion.
- (c) *Teaching Presence* happens when learning outcomes becomes meaningful through proper facilitation and direction of cognitive and social process (Garrison et al., 2000).

Pelz also highlighted the importance of cohesiveness in building and sustaining a sense of 'belongingness', group commitment with core common goals and objectives. Bradley and McConnell (2002) discussed the interaction between online and virtual learning in a combinational environment where students were expected to have direct group and cooperative responses. In the study, they compared the application of collaborative and cooperation in virtual environment against the traditional method of group participation.

It also described the concept of individualism and how that could be used in enhancing the dynamics in a virtual group discussion. Finally, it was concluded that simply introducing groups in virtual environment does not provide a sound pedagogical purpose for individuals to engage in an environment, however it emphasised the importance of awareness of the participators to gain some value-added learning experiences.

For the purpose of this study, the last two principles as discussed in Pelz (2004), was incorporated in our proposed HIITS² conceptual model to enhance learning and teaching in an ODL environment. With the diverse methods of presentation and interaction between tutor and students, the HIITS² online course would able to cater to all categories stated: social presence, cognitive presence and teaching presence.

This study also incorporated important pedagogical concepts as highlighted in Bradley and McConnell (2002) in the HIITS² model that is able to bring out the best of our learners' value-added experiences during the online course participation.

Looking at the online course pedagogy, Schell and Janicki (2012) used the constructivist learning model to emphasis the experiential learning of the learners. Technology advancement was used to replace the face to face approach in providing the students with more effective way to learn new materials. The constructivist model shows higher advantage comparative to the objectivism model in their study with college level students.

Use of information technology brought up the expectation of students having better control over the educational process and a practical style of day-to-day learning. It also increases the communication between the stake holders via smart phones and tablets which show the successful constructivist-style learning paradigm.

On the other note, open distance learning was used for decades in many countries to promote higher education to those who are not able to access the resources and facilities to upgrade their educational status with traditional face-to-face opportunities. A general study on the trends, progress and challenges faced by developing countries using ODL to promote higher education shows a deep commitment to improve the delivery and institutional management and planning (Pityana, 2009). Greater initiatives, collaborations and partnerships were identified as a tool to achieve ODL intuition enhancements in long term.

Novo-Corti et. al. (2013), in their presentation had used both E-Learning and Face-to-Face (ELFF) approach to prove the effectiveness of the methodology in tackling some issues such as promote participation, increase motivation and competence improved. In this work a virtual educational environment was explored using the Information and Communication Technologies (ICT) as a leaping step in higher education.

In our proposed model, we would use the ICT to evolve a virtual learning pedagogy incorporating online learning and teaching.

III. HIITS² Conceptual Model

The HIITS² conceptual model was designed to overcome one main issue which is to improve engagement and participation of students especially in classes with low student registration. It is impractical in term of cost to hire one facilitator for every regional centre if there is only one student who has registered in that regional centre. And when there is only one student in each regional centre, collaboration, corporation and engagement cannot take place. Therefore, a new approach was used to address this issue. A new initiative to conduct these classes fully online also known as HIITS² was introduced and is currently underway in WOU. Bradley and McConnell have suggested that the use of computer mediated conferencing (CMC) and a virtual learning environment (VLE) promotes not only collaborative but also cooperative learning (Bradley & McConnell, 2002).

For the purpose of this study, the CC in charge will be involved in both the online tutorials and informal discussion as an observer. The CC will not intervene unless the situation requires any intervention. Therefore, the data provided in this study will be qualitative and it is based on the observation of the CC in charge.

Every course in WOU is made up of 5 units each where one unit is covered for every face to face tutorial session. However, for the HIITS² courses, the online tutorial will be conducted twice a month with the duration of an hour each. Thus, the units will be divided into two sub categories. The reason for splitting the tutorial session from two hours to one hour is based on studies on the attention span of an adult learner especially in a synchronous online forum. It has been concluded that an average adult learner has a very short attention span of 20 minutes (Brown, 2014) hence putting them in an online classroom for 2 hours would not be relevant for this case.

Prior to the start of the July semester, two classes with low registration in all regional centres were identified to be the sample for this study. Those classes are: Introduction to Electronic Commerce (IEC) and Computational Logic (CL).

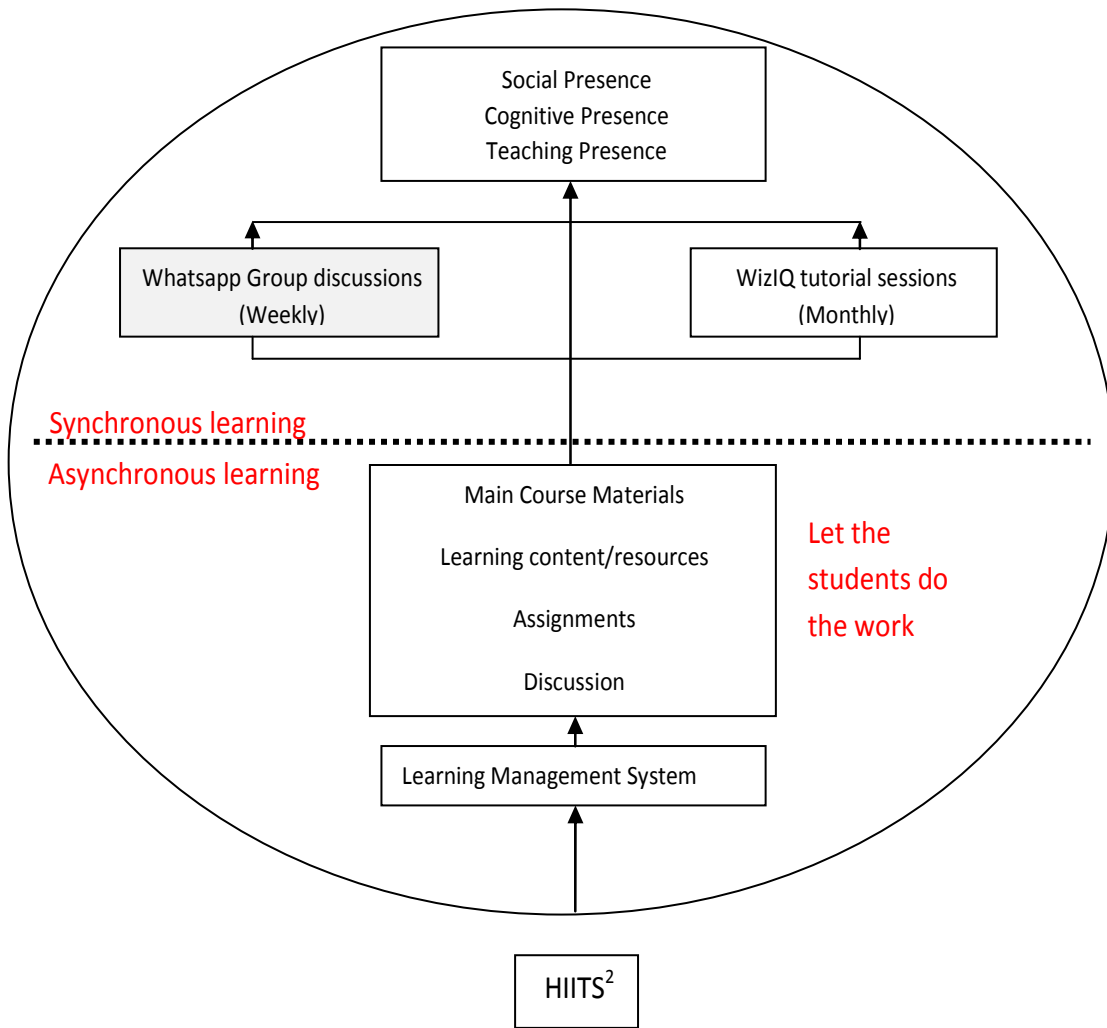


Figure 1: Proposed conceptual model of an online learning environment (HIITS²)

IV. Observation and Discussion

Based on Figure 1, HIITS² is the online learning environment whereby the two main participants are the tutor and the students. The CC will oversee the overall presentation of the course for the semester. The asynchronous learning environment will be via the LMS while the synchronous learning will take place via WizIQ and Whatsapp.

The main course materials, learning resources and assignment questions will be created by the respective course development team and posted in the LMS by the CC in charge. The LMS will act as a resource hub for the students as everything concerning the course would be accessible, including discussions and posts initiated by the CC, tutor or students as long as it is pertaining to the course content. This section is called the asynchronous learning as the learners need to log on into the learning environment anytime, anywhere (with Internet access), and download learning resources or submit posts or messages to the tutor and peers (Hrastinski, 2008). Hrastinski (2008), further elaborates that this supports flexible learning which allows students to filter and improve their thoughts and conception of the topics which is lacking in a synchronous communication. However it is still vital to include the synchronous learning element to this conceptual model because synchronous and asynchronous learning complements each other as these benefit learning (Hrastinski, 2008), thus creating a positive and well-balanced learning environment.

A synchronous learning environment is usually assisted through the use of video conferencing and chat that allow learner and tutors to receive real time feedback hence making the learners feel like part of a community rather than isolated (Hrastinski, 2008). Synchronous learning environment in Figure 1, is supported by WizIQ and Whatsapp. In a study conducted Eshet et al., (2003), online learning classes include short indexed video stream lectures by the course moderators or experts for every topic. Furthermore each of the video lectures focuses on the reading and assignments to better guide the students and provide a virtual personal point of view on the topics. In the HIITS2 scenario the current online classroom presentation lets tutor and students go real time and have an online video classroom using WizIQ. Through WizIQ the tutor is able to speak, chat and present different types of related learning materials such as Word, Powerpoint, URLs and so forth. The added advantage of using WizIQ is that students are also able to speak, chat and interact synchronously with the tutor giving them the convenience of getting immediate feedback from the tutor. However if there are students who are unable to attend the online classroom, the recorded version of the whole lecture will be made available on the LMS. WizIQ allows tutors and students to interact and create a knowledge sharing environment which can be beneficial online and also offline.

Weekly discussions are conducted via Whatsapp or the LMS discussion tool where either the tutor or students can post and start the discussion. It was observed that students were keen to give their opinions on the discussion and provided peer assistance when needed. Peer assistance is when students help each other to learn (Pelz, 2004). Including a 10% participation marks into the assessment strategy could also be one of the reasons for the increased participation of students in the resources. However, from the observation by the CC in charge, students seem to be very active in the Whatsapp group rather than the LMS. The tutor will need to remind students in the Whatsapp group to be active in the LMS discussion to get more feedback in the LMS. If no reminder is given, students naturally did not check on the LMS. But after the reminder was sent students did collaborate and engage themselves in the discussion in the LMS as shown in Figure 2 and Figure 3.

Discussion	Replies
<u>T1: E-commerce business models</u>	4
T1: Value proposition	4
T1: Facebook in e-commerce	6
T1: Classification of electronic commerce	5
T1: Benefits of social commerce	2
T1: Transformation from physical to digital	4
T1: The difference between e-commerce and e-business	4
T1: E-commerce framework	5
T1: Brick-and-mortar and pure-play	4
Tutorial 1 Part B	3
Tutorial 1	7

Figure 2: LMS participation for IEC with only 4 students

Period ending (Week)	Student	Tutor
27 September 2015	61	0
20 September 2015	75	86
13 September 2015	74	5
6 September 2015	64	70
30 August 2015	38	0
23 August 2015	100	33
16 August 2015	68	0
9 August 2015	68	31
2 August 2015	250	68
26 July 2015	142	40
19 July 2015	119	39
12 July 2015	0	24

Figure 3: Weekly LMS activity log of students and tutor for IEC

Even though the students who registered for IEC & CL did not participate in all the discussion posted by their facilitators, but out of the 20 discussions posted to date, they participated in at least 15 of them which indicated engagement and positive collaboration. Figure 3 shows a very good response from students in the LMS discussions. As observed in the feedback of the discussions, most students provided good answers by constructing their own understanding of the concepts and gave their own relevant examples to justify their points. The commitment of tutors also played a big part in the volume of engagement and collaboration of these students.

The Whatsapp participation for the IEC & CL class is active every week as students or the tutor will post questions into the group. Students are very participative and opinionative in their respective courses which make collaboration very easy. Social presence, cognitive presence and teaching presence was observed throughout the course presentation.

- *Social Presence* was available in all three tools (LMS, WizIQ and Whatsapp) as a learning community was created and students did participate by giving their views and ideas. Students did not seem hesitate to interact especially via Whatsapp because after a question was posted, immediate response was provided by both students and tutors (Figure 4).

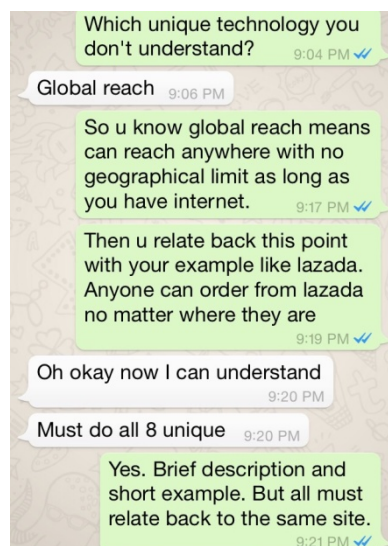




Figure 4: Excerpt of the discussion in the Whatsapp group

- *Cognitive Presence* was also highlighted when students were able to describe and provide examples for a particular topic which indicated that students understood the topic being discussed (Figure 5).
- *Teaching Presence* can be found in all three tools provided but it is mostly evident in WizIQ as shown in Figure 6. The tutor provided proper facilitation to accommodate the learning outcomes and improve the cognitive and social process amongst students.



T2: Customer loyalty
 - Thursday, 20 August 2015, 10:33 AM

Q. What do you understand about e-loyalty?



Re: T2: Customer loyalty
 - Saturday, 22 August 2015, 7:32 PM

A2. Customer loyalty shown through repeat purchases online from a e-comm site. More often than not, bad reputation of a failed e-comm site, company or brands tends to spread fast and wide in that particular niche forums (either trolling or cyber bashing). Which is some time hard for that e-comm or company to defend on all grounds.

Good reputation is noticeable in verbal or online viral sharing of a particular promotion or discount among peer or colleagues. Good rating and feedback on Lelong and eBay site is also a good sign of potential loyalty among their existing customer group.


T2: Satisfaction in e-commerce
 - Thursday, 20 August 2015, 10:35 AM

Q. What are the factors that affect consumer satisfaction when they shop online?


Re: T2: Satisfaction in e-commerce
 - Friday, 21 August 2015, 10:49 PM

Based on my observation of some commerce sites like Lelong, eBay, Lazada, the customer satisfaction that they are trying to deliver are:

1. Offering great price bargain, group discount or special incentives when buying online (relates to Consumer char)
2. Trust worthy and good service sellers as well as buyers with good reputation. As nobody wants to be cheated online where its hard to trace, callup, complain and blacklist and worst if the amount in huge (relates to Merchant char)
3. Wide range of products and services from many sellers to chose from and also many delivery and payment options (relates to products)

Figure 5: Excerpts of the discussion in the LMS discussion

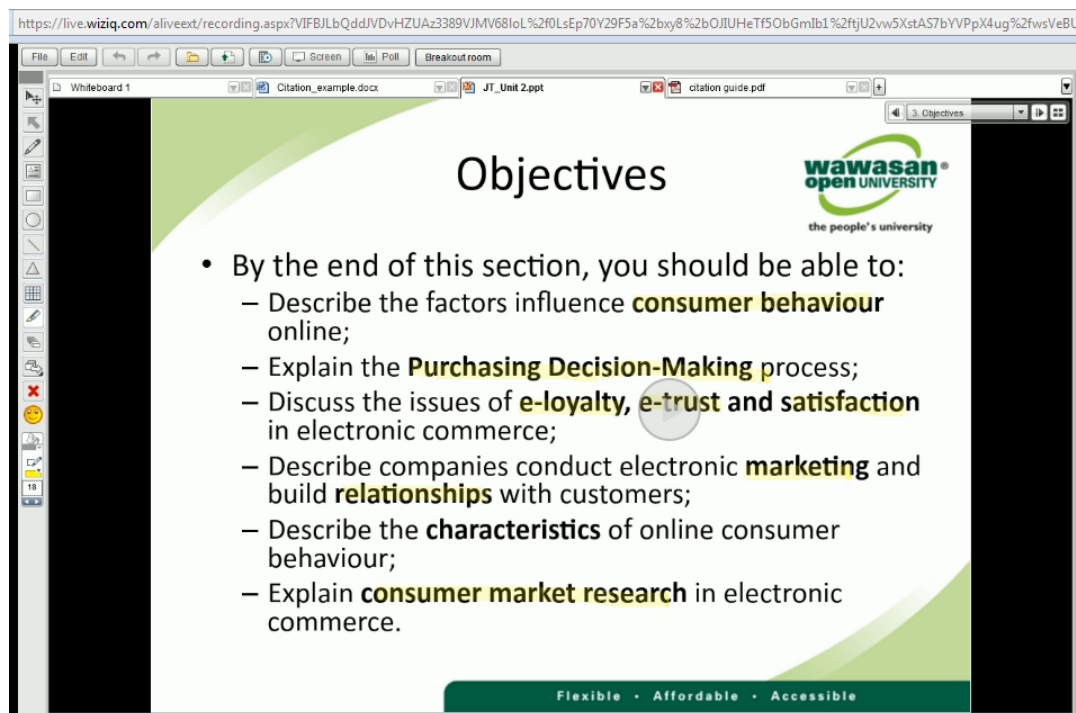


Figure 6: Screenshot of the WiziQ session conducted by the tutor.

V. Conclusion

In an open university, where most of the students are working adults, it is best to transfer these work experiences into a community where knowledge sharing can take place. It is not enough to have only learning tools for these learners but also to incorporate interaction tools which are easily accessible at anytime and anywhere. This is reflected through the combination of the LMS, WiziQ and the Whatsapp application into their learning environment where students have gained valuable insights through constructive discussions and knowledge sharing not only with their tutor but also with their peers. With the proposed conceptual model for an online learning environment or HIITS², where the emphasis is on the social, cognitive and teaching presence, it is possible to give students better learning mobility and increase cognitive retention through their higher online learning experience. Future suggestions for this study will include the assessment strategies for a fully online course.

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CONCEPT MAPPING STRATEGY FOR ACADEMIC WRITING TUTORIAL IN OPEN AND DISTANT LEARNING HIGHER INSTITUTION

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Abstract

Universitas Terbuka (UT) an open and distant higher education institution of Indonesia conducts the in-service teacher education program. In order to complete the program, the students – mostly teachers - have to submit the final academic paper. In fact, most of the UT students have difficulty to write this academic paper. UT offers an academic writing course to solve this writing program. Most of the student view academic writing still as a difficult assignment. Most of the students view academic writing as a difficult assignment to complete. UT has to find an appropriate instructional strategy that can facilitate student to write the academic writing assignment. One of the instructional strategy that can be selected to solve the academic writing problems is concept mapping. The aim of this study is to elaborate the implementation of concept map as an instructional strategy to facilitate the open and distance learning students to complete academic writing assignments. A design based research was applied to measure the effectiveness of using concept mapping strategy in helping students to gain academic writing skills. The steps of research and development model from Borg, Gall and Gall which consist of instructional design and development phases were implemented in this study. The result of this study indicated that students were facilitated and enjoyed the process of academic writing used the concept map strategy.

Key words: *Concept map, academic writing, tutorial*

Introduction

Academic writing is one of the problem faced by the students of the Teacher Education Program of Universitas Terbuka. only a few students who have a good ability to write and to publish proper academic papers. It is difficult for the majority of teachers to write an adequate academic paper that can be published and presented in the intended academic forum. Most of the teachers perceive the academic writing as a difficult and rigorous task to complete.

To cope with these problems, the Ministry of Education and Culture of the Indonesian Republic encourages several Teacher Training Institutions to conduct courses and workshops on academic writing. Academic writing courses and workshops, in fact do not provide the students with the ability to solve the problem. Most of the workshops and courses on academic writing are not designed to provide the students with hands on writing experiences. In this program, the students have a good knowledge in writing, but do not have the *real skills* in writing academic papers. Regarding of this situation, the students who participate in the Academic Writing course in general a have lack of motivation and efficacy to finish their writing assignments.

Universitas Terbuka, the open and distance learning universities of Indonesia, has conducted teacher training program to improve teachers' professional qualification. One othe course offered by the program is Academic Writing. Since the academic writing has been perceived as the dificult task by the students. Regarding to this situation, it is necessary for the Universitas Terbuka to explore the instructional approaches that can be applied to facilitate students to master the real academic writing skills.

One of the instructional approaches that has a prospective benefit to facilitate the students ability in writing academic papers is concept mapping. Concept map approach enables the students to explore and to compose the students present knowledge required in academic writing. This paper will elaborate the implementation of concept map as an instructional strategy to facilitate the open and distance learning students to complete the academic writing assignments.

Research Method

The Borg, Gall and Gall research and development method called Steps of System Approach Model of Educational Research and Development (2007) was applied in this study. The face-to-face tutorial program on academic writing was designed, developed and implemented in a class which consist of 30 distant lerning students who enrol in academic writing course. Most of the respondent (n = 30) have no real experiences in writing academic papers. Steps of academic writing and assignments were assigned to the respondents. Test, questionnaires and observation were done to reveal respondents learning result and satisfaction.

The Use of Concept Map in Academic Writing Process

One of the important characteristics of the distance education system is the separation between teacher and learner (Heinich, 2005; Moore, 2006). In this mode, learning content is delivered through various types of instructional media. Even the use of media is dominant, some distant education institutions still using face-to-face tutorial sessions to support the students' learning process.

UT uses a tutorial program to assist students to understand the course content. Several modes of tutorial programs – face-to-face and online modes - are designed and provided to support the students' learning process. The face-to-face tutorial is compulsory for the students who enroll both in teacher education and non-education programs. One of the important courses offered in those programs is Academic Writing course.

The aim of this course is to provide academic writing experience and skills for the students who enroll in the programs. The instructional goal of the Academic Writing course is stated as follows: *".... After completing the academic writing course the student will be able to write an academic paper based properly on their selected topic."*

In general, the majority of the students who enroll in teacher basic education programs have no hands-on or real experiences in writing academic papers. Most of them cosider the academic writing as rigorous activities to complete. Indeed, the academic writing course requires the students to read some reading materials regarding to their interest and selected topics. Designing the instructional program that suits the students' need is necessary in order to help them to attain the predetermined instructional objectives – the ability to write a good quality of academic paper.

Academic writing can be defined as any writing done to fulfill a requirement of a college or university. This activity is used for scsdemic publications that are read by teachers and researchers or presented at conferences. A very broad definition of academic writing could include any writing assignment given in an academic setting (<http://www.grammar.yourdictionary.com>).

Academic writing is the type of writing students are expected to produce in response to content they learn about in academic setting (www.debrabell.com). Academic writing is also defined as writing activity done by scholars - students or academicians - for other scholars to read. The product of academic writing can take many forms: journal articles, text books, dissertations, group project report etc. It is usually done by the university students and researchers to convey a body of information about a particular subject. Generally, academic writing is expected to be precise, semi-formal, impersonal, and objective.

The general purpose of the academic writing is to present information that displays a clear understanding of a subject. The writers have to demonstrate that he / she has a deep understanding of the specific academic substances. The most common purposes in academic writing are to persuade, analyze / synthesize, and inform (<http://www.amarris.homestead.com>). Villalon and Calvo (2011) noted that writing develops not only communication skills, but also high er-level cognitive processes that facilitate deep learning. (p. 16).

Writing academic papers is not an easy task. The writer has to find an appropriate topic to write. Academic writing is considered as a hard process. In order to be able to write a good journal article, the writers have to cram complex scientific ideas, methodological detail, and statistical analyses into a tight articles. (Silvia, 2007).

Ericsson, Krampe & Tesch – Romer in Silvia (2007) noted that writing is a skill not an innate gift or a special talent. Like any advanced skill, writing must be developed through systematic instruction and practice. People must learn rules and strategies and then practice them. To be able to write a proper academic paper, it is necessary for the writer to do intensive practices.

Writing is considered as an activity and process which requires some systematic steps. The writer has to follow certain writing steps which include: (1) Choose a topic; (2) Gather ideas; (3) Organize sub-topics; (4) Write the outline; (5) Review structure and content (6) Revise the structure and content (<http://www.wikidot.com>). The writers in this sense have to follow a tight procedures to create an academic paper properly.

In writing the academic paper the students often face the difficulty in selecting the topic to write. These problems happens due to lack of experience in expressing the ideas or the knowledge in writing activity. One of the approach that can be used in solving this problem is to implement concept mapping strategy

Concept maps are graphical tools for organizing and representing knowledge. They include concepts, usually enclosed in circles or boxes of some type, and relationships between concepts indicated by a connecting line linking two concepts. Words on the line, referred to as linking words or linking phrases, specify the relationship between the two concepts. We define *concept* as *a perceived regularity in events or objects, or records of events or objects, designated by a label.* (Novak and Canas, 2006).

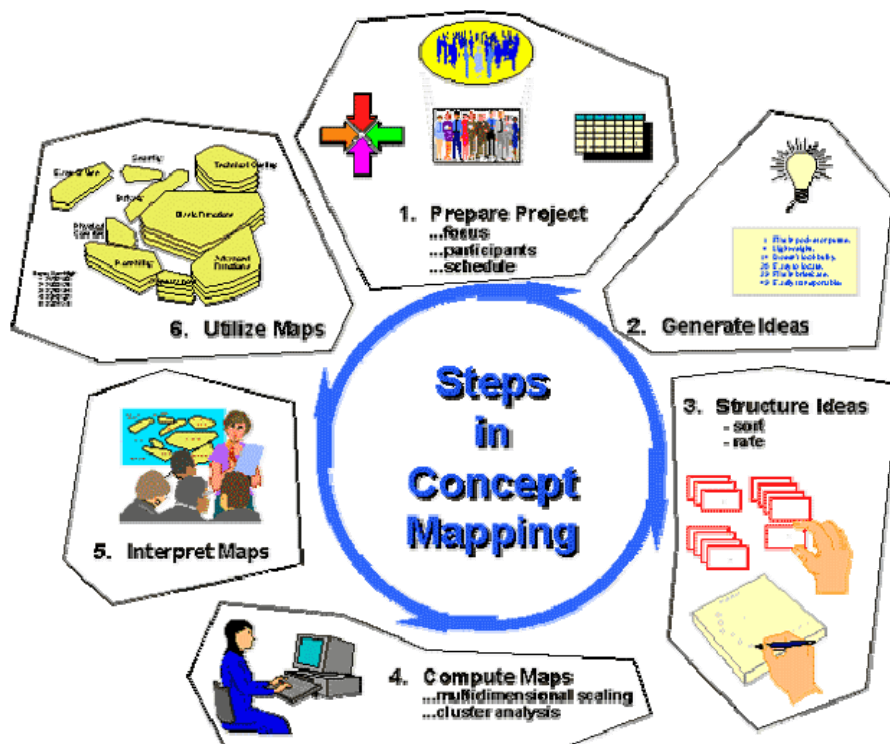


Figure 1: The example of a concept map

Concept mapping describes the relationships between concepts and ideas in visual illustrations. Often represented in circles or boxes. Concepts are linked by words and phrases to show. The concept map approach explains the connection between the ideas. The use of concept mapping will help the learners in organizing and structuring their thoughts to further understand information and discover new relationships. Concept maps in general represent a hierarchical structure, with the overall, broad concept first with connected sub-topics, and more specific concepts.

A concept map is a visual organizer that can enrich the students understanding of a new concept. Using a graphic organizer, students think about the concept in several ways. Most concept map organizers engage students in answering questions such as "What is it ?" "what is it like?" "what are some examples ?" Concept map deepen understanding and comprehension. (<http://www.readingrockets.org>).

The use of Concept map in academic writing process serves several benefits for learners such as: (1) Helping students brainstorm and generate new ideas; (2) Encouraging students to discover new concepts and the propositions that connect them; (3) Allowing students to more clearly communicate ideas, thoughts and information; (4) Helping students integrate new concepts with older concepts; (5) Enabling students to gain enhanced knowledge of any topic and evaluate the information.

Several studies have been done regarding the implementation of concept strategy in academic writing process. Villalon and Calvo (2011) studied the use of concept map as a visual organizer and cognitive organizer. Their study noted that concept map can be used as as part of learning activities including as a form of scaffolding, or to trigger reflection by making conceptual understanding visible at different stages of the learning process. In addition, the study also noted that that complete concept map, with concepts and labeled relationships, are possible and its precision depends the level of summarization (number of concepts) chosen.

Lee (2013) conducted a study aimed at examining the use of concept mapping technique in a course module for Korean language learning with U.S. college students. The result of the study indicated that concept mapping enhances students' communicative interaction to promote their L2 writing. She also found that the peer collaboration for constructing concept maps did not support the improvements in composition scores.

Kozminsky, Kozminsky, Nathan and Horowitz (2012) conducted another study related to the implementation of the concept map strategy to teach academic writing. It appears that concept mapping instruction and application during pre-writing contributed to the accessing and use of prior knowledge for written essays and improved their rhetorical structure in comparison to a control instruction. However the use of concept maps in pre-writing do not related to the quality of the writing product.

The use of concept maps in general provides some positive contributions for the students to generate topic and sub-topics and the outline for writing academic papers. The students will elaborate the previous knowledge to generate topics and sub-topics required in writing academic papers. The concept maps as visual organizers used in academic writing helps the students in: (1) helping the students in organizing new information; (2) helping students to make meaning ful connections between the main idea and other information; (3) composing the content area or subject matter.

Discussion

The first phase of this study was collecting information regarding the students' knowledge , skills, motivation and their experience in writing academic paper. This collecting information stage indicated that the majority of the students have low level of knowledge and skills in academic writing. In addition, they have no experience in writing the academic papers. However, they have a high motivation to be competent in academic writing.

The high students' motivation of learning the academic writing skill is related to the condition that the ability to write academic papers will help them to improve their academic carrer. Based on the results of information collecting phase, the instructional goal of the toturial program is stated as follows: “ **After completing this academic tutorial program the students will be able to write an academic paper based on the selected topic and rules of the academic writing.**” This instructional goal of the tutorial program requires the students to engage actively in learning process.

In this study, the process of instructional analysis was applied to determine the necessary subskills that should be learned by the students. Mastering the subskills will facilitate students to achieve the stated instructional goal of the tutorial program – the ability to write academic paper. The result of the instructional analysis is the systematic structure of the following subskills:

INSTRUCTIONAL ANALYSIS OF ACADEMIC WRITING COURSE

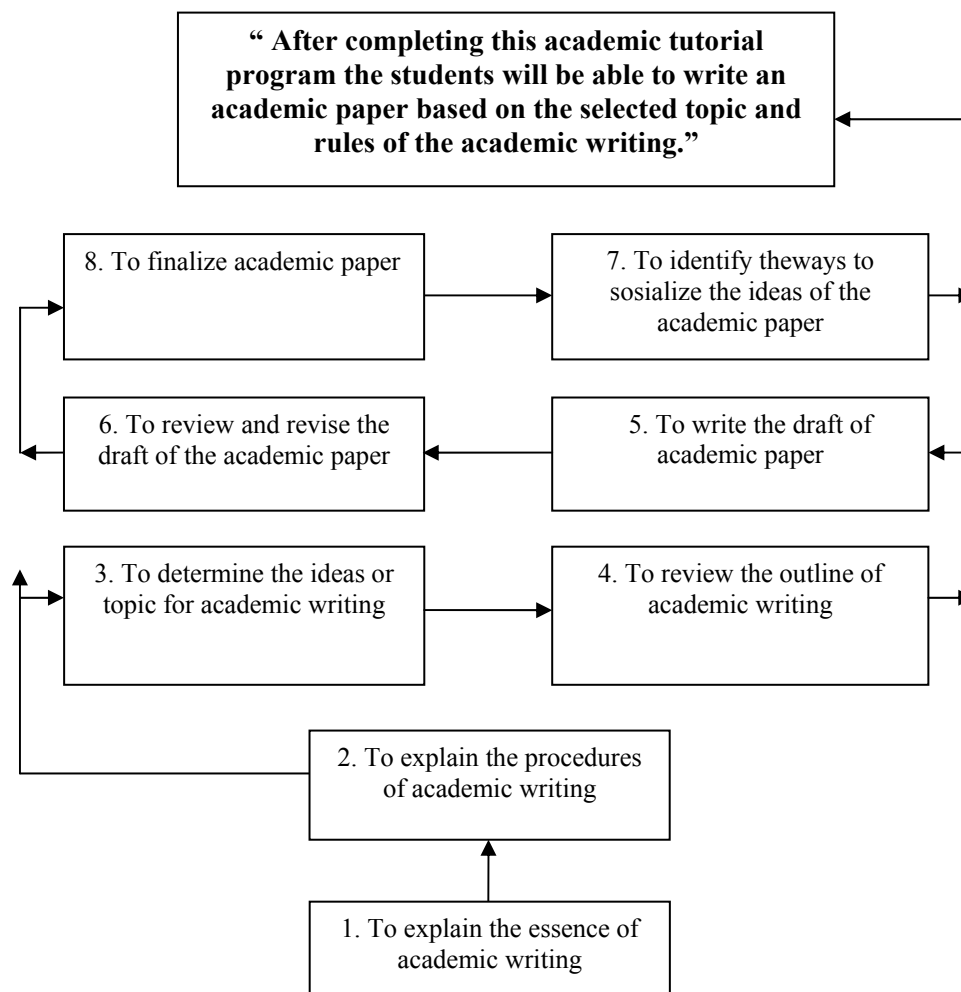


Figure 2: Instructional analysis of academic writing course

In order to achieve the course objectives the students has to foolow the Academic writing process which include the following phases; (1) determine the idea or topic of the academic paper; (2) Develop the outline of the academic paper; (3) review and revise the outline of the academic paper; (4) wrote the draft of the acamic paper; (5) review and revise the draf of the academic paper; (6) finalize the academic paper.

The concept map strategy was implemented to all phases of the academic writing process. At the first stage the sudents have to complete the assignment of determining academic writing topics and sub-topics that will be used for writing academic paper. Students implement the concept maps to determine the topic and to develop the outline of the academic paper. Observation conducted in this phase indicated that the students fells enthusiast and enjoy the proses of selecting topic and composing the outline of their academic paper. In this phase, the students were able generate ideas and to ellaborate mtheir previous knowledge related to the selected topic. In this matter the use of concept map provides several benefits to the process of academic writing such as: (1) helping students brainstorm and generate new ideas; (2) encouraging students to discover new concepts and the pppositions that connect them; (3) allowing students to more clearly communicate ideas, thoughts and information; (4) Helping students integrate new concepts with older concepts; (5) Enabling students to gain enhanced knowledge of any topic and evaluate the information. (<http://www.inspiration.com>).

At the end of the face-to-face program the students were able to compose and to write the academic paper draft which based on the previous paper outline. The interview with the students as the respondents indicated that all the respondents enjoyed and satisfied in the design learning activities of academic writing with concept map strategy. The majority of the respondents (n= 30) expressed that: “the use of concept maps facilitate the students in finding the topic to be elaborated in writing an academic paper.”

Conclusions

The concept map strategy which is used defined as visual organizer helps in connecting students' present and old knowledge. This strategy can be used to generate ideas and topics required in writing academic paper. In general, the use of concept map was able to facilitate students in selecting the topics and elaborating the paper outline. The implementation of concept maps in writing the academic papers provide several benefits such as: (1) helping students brainstorm and generate new ideas; (2) encouraging students to discover new concepts and the propositions that connect them; (3) allowing students to more clearly communicate ideas, thoughts and information; (4) Helping students integrate new concepts with older concepts; (5) Enabling students to gain enhanced knowledge of any topic and evaluate the information.

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What is Academic Writing? (www.debrabell.com)

PERCEPTIONS ON STUDY SKILLS NEEDED BY DISTANCE LEARNERS: A SRI LANKAN PERSPECTIVE

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Abstract

The study reveals the research findings of the study skills needed by the Sri Lankan distance learners. The literature reports that distance learners need extra skills as they are self learners, self planners and self evaluators. It is obvious that to be an independent learner distance learners need skills. The significance is that Sri Lankan distance learners do not have prior experience of learning in distance mode. They do not know the pattern of learning in distance mode courses and the challenges they have to face when studying in distance mode. Distance mode learning is completely different environment for the Sri Lankan learners. Therefore, it is felt that many of them are facing problems of submitting assignments on time for getting eligibility to continue studies. Many SL institutions which offer distance mode teaching have started short courses aiming to develop study skills and to make them aware about the pattern of distance mode learning. The findings revealed that they need management, IT and Interaction skills to continue studies and available orientation sessions are not sufficient. Therefore it is suggested to introduce new courses considering three domains and key skills of the learners.

Introduction

Traditional university system accommodates face to face learners and they are fully engaged in the learning process during a specified time. Traditional education led to lifelong education which in turn paved way for formal Distance Education (DE). Later, DE developed into the field of higher education as a strong need emanated from the people who had no opportunity to enter the conventional universities but were enthusiastic in accessing high level educational qualifications. Hence, it is obvious that Open/distance learning mode has become an acceptable means of providing access to higher education in this twenty-first century. Mishra (2002) outlines the principal challenge for distance education in the twenty first century; the support and promotion of social and economic development, both in the developing and developed countries. The challenge for distance education is to reach the many millions of previously unserved people who are under-skilled and under-prepared for the changing demands in the workplace of the twenty first century. The other reason is that students in higher education often face more complex and demanding learning challenges than they met in schools, calling for greater autonomy and technical skills, so their key skills will need to develop to meet such demands.

A key part of this role is the development of generic and vocational skills that form the basis of a workforce that is equipped to be internationally competitive and self-renewing. It is argued here that skills development will not effectively occur if we rely on traditional methods of distance education delivery and assessment.

With the development of Information Technology (IT), the method of traditional teaching and learning has been changed. IT has made teaching and learning easier. Nature of day to day working systems is also changing due to new tools and equipment that are introduced day by day. For that, customers need skills to handle new machines and equipment. Generally accepted thing is that all need skills to do something. According to Cloete (1986) that skill is called survival skills. Further, those who have survival skills at an early age as a student or as a worker should have less difficulty living in the present complicated world

In the same way, field of education also has changed the pattern of teaching and learning and have introduced on line learning, online interaction, online chatting, mobile learning, video conferencing etc. Therefore, present learners need more skills in order to become active learners. Active learning should take place in distance mode of learning as the key responsibility for academic success lies with students. Due to that, many institutions who offer distance mode courses readily agree to help students to improve their basic study skills especially as distance learners are adults who cannot function successfully. Therefore, the aim of this study is to identify features of study skills that are likely to lead to success in Sri Lankan distance learners.

Present Scenario in Sri Lanka

Correspondence model of education has been in existence since 1930s in the country. DE was formally introduced in the country when the distance education branch of the Ministry of Education was started in 1970s. The main objective of having a DE branch at the Ministry was to train government teachers who are scattered in the country without higher education qualifications. Later, in 1972 DE branch for teacher education and external services agency was established. Further development of DE started in 1976 by having started Sri Lanka Institute of Distance Education in the country. In 1980 the Open University of Sri Lanka (OUSL) was established amalgamating all the institutions, as a national single mode distance teaching institution. Currently NIE is conducting Open School programme though it had a DE branch having the objective of training government teachers. Further development in DE system in Sri Lanka was initiated in 2004 by the Asian Development Bank funded by Distance Education Modernization Project. Many conventional universities and more than twenty private institutions are conducting partly online distance mode programmes in the country. But OUSL is the leader of all these institutions that are currently offering higher education distance mode programmes having more than 30,000 registered students.

Nature of Sri Lankan Distance Learners

Although distance mode learning is available in the country many of (95%) Sri Lankan distance learners do not have prior experience of distance mode learning. As distance learners are self evaluators OUSL has introduced a number of programmes to develop study skills and to make aware of the nature of distance/online learning for newly recruited learners. Basically, all institutions are conducting 'orientation programmes and workshops to make students understand the nature of learning.

In DE mode learning, the key responsibility for academic success lies with student. That responsibility increases with each level of study. Therefore, many distance mode teaching institutions have started study skills development programmes (OUUK- study skill tool kit). Wingate, (2006) emphasized that most universities, as well as individual faculties and departments, have developed their own skills agendas. In the same manner, Sri Lankan institutions that offer distance mode courses also have started many study skill programmes. Most Sri Lankan institutions conduct one week orientation period after registering to the online courses to familiarize the pattern of distance learning. Moreover, day schools are available to discuss their academic problems and formative and summative assessment is also done to evaluate the students.

The OUSL introduced recently three study skill training sessions such as 'Learning to Learn', 'START@OUSL', and the 'PASS' (Peer Assisted Study Sessions). 'Learning to Learn' help learners to learn how to study in distance mode programmes. The 'START@OUSL' is the compulsory programme which includes six components. They are E-Gap (general English for the subject), SNL (Second National Language, Sinhala or Tamil language) and EfIL (Empowering for Independent Learning) which are compulsory components while other three, 'Soft skills, ICT and Social Harmony' are optional. Students have to pay fee for the components of the 'START@OUSL' study session while online learners get it free of charge. The objective of the 'PASS' is to render support to student in a group setting where they share their educational experiences, problems and success. Registered

students can participate to all these programmes/ components/ workshops if they want and can improve their knowledge and skills. These processes build confidence and develop study skills in the independent learners to excel in their courses.

Objectives of the Study

The main objective of the study is to examine perception of the study skills needed by Sri Lankan distance learners. With that objective, following questions were formulated to continue the study.

What are the skills available to them before registering for the distance mode course?

What are the skills needed by the SL distance learners to continue their studies?

How effective are the orientation/study skill programmes to continue their studies?

How do the skills transferred to their studies?

How do they transfer their skills to other environments such as peers, workplace, society etc.?

Significance of the Study

Many researchers emphasize the necessity of study skills for the distance learners as they are self learners. The significance fact is that Sri Lankan distance learners do not have prior experience in studying in distance mode. Therefore, it is important to understand perception on study skills of the Sri Lankan distance learners. The findings of the research help to evaluate and improve the study skills programmes offered by the institutions considering the findings of the research. Due to that this research study is significant.

Literature Review

Definition for Study Skill

Simpson (2002) defines student support within open and distance learning is having two main strands, academic and non-academic. Cognitive skills such as literacy and numeracy are academic skills while aspects like time and organizational skills etc. belong to the other category. Johnson (2004) defines that all the generic non-course skills that a student needs to develop in order to be an effective independent distance learner. Cottrell (2001) defines study skills as ‘part of a border process of personal, academic, and professional development’ continuing throughout the degree course into working life. Crede (2008) opines study skills that the student’s knowledge of appropriate study strategies and methods and the ability to manage time and other resources to meet the demands of the academic task.

Classification of Study Skills

The Literature indicates that there are different types of study skills that are needed for learning. They are academic skills, computer literacy skills, virtual learning skills, computer literacy skills, reading skills, listening skills, writing skills, media skills, online interaction skills, internet searching skills, social interaction skills, self-assessment skills, digital literacy skills, report writing skills, analytical skills, critical thinking skills etc.. The core/key skills highlights in the literature are

- Communication skills
- Time management skills
- Academic skills

- Digital literacy skills
- IT skills

QAC presents key skill framework with the integration of study skills and are given Table -1 below.

Table 1: Key Skill Framework

QCA key skills	‘study skills’
Communication	Written: essay; project; report writing; oral presentation
Information technology	Library/information skills
Numeracy	Using graphs, statistics in written work, presentation
Problem-solving	Planning and conducting project, experiments
Working with others	Planning and conducting group projects
Managing own learning and performance	Time management, memory

Sources: QAC (2000)

Murphy (2001) highlights three types of skills such as, basic skills (such as literacy and numeracy), key skills (the generic skills of application) and study skills (skills particularly associated with induction into higher education). John et al. (1996) classify study skills as cognitive, metacognitive and affective in nature. Further, cognitive skills are those that focus on developing or enhancing particular task-related skills such as note taking summarizing, reporting etc. while metacognitive skills are those that focus on the self management of learning, that is, on planning, implementation and monitoring one’s learning effort. An affective skills are those that focuses on some non-cognitive aspects of learning as motivation and self-concept..

Role of the Study Skills

It will develop the capability of doing something accurately. Drew and Bingham (1997) describe core skills and states that personal skills improve skills of own learning while problem solving and performance skills will help dealing with others. Communication skills will help to improve essay writing, note taking, report writing, and group working activities. Murphy quote Dearing (1997) and states about key skills, which it regarded as being ‘key to the future success of graduates whatever they intend to do in later life’, that are communication skills, numeracy, the use of information technology, learning how to learn. Wingate (2006) also states the same idea as the Dearing recommended, that study and key skills are identical and transferable from study to work. Further, key skills are important for employment and students future life

Study Skills: Why is it Significant for Distance Learners

Many researchers emphasize, (Johnson, (1996); Onsuki (2012);Wingate (2006); Mishra (2002); Cloete (1986) the importance of development of study skills for distance learners considering two main reasons such as characteristic features in DE system and characteristic features of distance learners.

Characteristic features of DE are that the institution does not conduct regular teaching sessions within its premises. Instead of that a learning package is given. This package may include learning resources. The students are expected to learn on their own conveniently using the lesson pack. They do not meet teachers and peers regularly therefore distance learners are isolated from the institution, the teachers and peers. They meet at day schools to discuss their problems which are aroused when they engage in self study. Therefore, distance learners need extra skills as well as extra support from the authorities

through provision of Learning Resources (LRs) at right time, and support services to right person without fail to continue their studies at a distance.

Distance learners seem to be unique with their diverse potential, intellectual capacities and experience of life. Whatever the reason, distance learning is fewer tutors centered, relying on the student to be more active and take a greater responsibility for organizing their own studies. They have their own concept about learning. Nevertheless, different researchers (Hussain, 2005; Merriam, 2001; and Rashid, 2002) assumed distance learners to be adults who are self-regulated, self directed and self-motivated to learning.

Further, distance learners are active, solve problems, perform tasks, and meet deadlines which require different skills such as cognitive and psychological to continue their studies. Hillary Perraton (1987) ensures that students are active in reading, watching and listening. Being active, they have to do all individually as they are away from teachers, peers, and the institution. Therefore, Eshet-Alkalai (2004) states that individuals are required to use a growing variety of technical, cognitive and sociological skills in order to perform tasks and solve problems they face in digital era.

Though they are individual learners, they have to interact with tutors for academic purposes. A tutor, in the system of distance education is the person who guides and directs learners to improve their knowledge and learning skills. S/he is regarded as a pillar of study contacts between subject matter and learners which is usually lacking in pre-packed courses. Apparently, a tutor communicates with a diverse community of learners who learn through self-directed study. Self-directed learners need assistance and mentoring to set right pace of their learning. Tutor provides support and guidance to them by developing academic liaison. It helps them to achieve higher grades and motivation to further learning. Hussain (2013) confirms that 65% learners affirmed that their tutors encouraged their reflection for developing communication skills and confidence among them.

Further, Halsne et al. (2002) state that when students lack proper academic support services during their studies, their academic progress is likely to be negatively affected. With lack of time, difficulties in concentration, family commitments, organization of time and planning, low levels of motivation, study skills, resources, anxiety and isolation, students may not finish their programmes. (Murgatroyd & Redmond, 1978; Halsne & Gatta, 2002)

In addition to that study materials are given to students to study at convenient pace and feedbacks for the assignments are sometimes given on line. Therefore, teacher learner relationship is not available. Due to all these factors there is an increased need for the development of study skills.

Further, Johnson (1996) states that as ACRL stated (1990) the institutional has duty to provide an inclusive learning environment which involves the development of the necessary study skills for success.

Johnson (1996) states that in order to be an effective learner study skills need to be developed. Tait (2003) defines study skills in this manner ‘amount of all the generic non-course specific skills that a student needs to develop in order to be an effective independent distance learner. Johnson (1996) emphasizes skills should be developed considering the type of the course. If the course is online or has online components students have to improve such skills as accessing and storing information, communicating with tutors and peers, taking part in online discussions and virtual tutorials as required. Tuamsuk et al. (2013) state teaching and training on self-learning skills or information literacy skills should be given to students.

Problem of the Study

Sri Lankan distance learners do not have prior experience of learning in distance mode as only the higher education courses are offered in the country. It is noted that many of them are facing problems of submitting assignments and reports on time for getting eligibility which enable them to continue their studies. All the Sri Lankan institutions which offer distance mode teaching have started short courses aiming to develop study skills and to make aware the pattern of distance mode learning. But how do we know that we are developing the appropriate skills in our distance learners? It should be surveyed and evaluated. No one has conducted any research on study skills up to now though DE started in 1980's in Sri Lanka while online courses started in 2004. So researcher wanted to assess how skills affect their studies and to what degree are they being transferred to other environments such as peers, workplace, society etc.

Methodology

96 distance learners who registered to different courses in 06 institutions were selected as a sample for the study. The sample consists of those who follow online courses at University of Jaffna, University of Rajarata, University of Colombo, University of Peradeniya, Department of Vocational Studies (Ladies College) and print base distance mode courses at OUSL. Survey method was used to collect the data from the students. The main research tool was a questionnaire. Key skill framework (QAC, 2000) and findings from the literature were used when developing tool. Likert scale, open and closed ended questions were included in the questionnaire.

Questionnaires were distributed during the period of April-July 2015 among distance learners at the day schools. Interviews were conducted with tutors of the selected courses after getting appointment during the same period. Research approach was mixed and both quantitative and qualitative data were collected from the sample using selected instruments.

Collected data from 90 students was entered to the SPSS package, 19.0 version. Descriptive frequency analysis was done and tables and diagrams, bar charts were used to present data.

Findings of the Study

Profile of the Respondents

Age limit of the respondents are given in Table-2 with percent. Majority of the respondents are 31-35 age range.

Table 2: Age Range

Age	Frequency	Percent
1 21-25	15	17
2 26-25	15	17
3 31-35	30	33
4 36-40	16	18
5 Older than 40	14	15
Total	90	100

Table 3: Sex Profile of the Respondents

Sex	N = 90		Married		Employed	
Male	51	56%	38	42%	47	52%
Female	39	43%	21	23%	13	14%

Table -3 above, shows the marital status, employment status civil status of the respondents. It was revealed that as shown in Table-3, 56% of them are male while 43% of them are female respondents. 59 (65%) of them are married while 31 (35%) of them are unmarried. Moreover, 66% of respondents are employed while 34% of them are unemployed. Further found that 82% (74) respondents have computer at home with internet access.

Therefore, their computer literacy skills high and 65% of them have marked their knowledge of handling computers is excellent as depicted in Table-4 below.

Table 4: Computer Literacy Skill

Computer Literacy Skill	N = 89	
Excellent	58	65%
Average	22	25%
Poor	9	10%

Study Skills Prior to Entrance

The abilities and skills of the learner's had when entering to the course was also checked hoping to make an evaluation whether distance learners' skills were developed through the orientation and course work. It was found that as depicted in Figure-1 below, the highest (excellent) skill majority of them had were IT while being the reading skill lowest rate, 'not at all'. Time management skill was available to some extent while being the internet searching skill was the least.

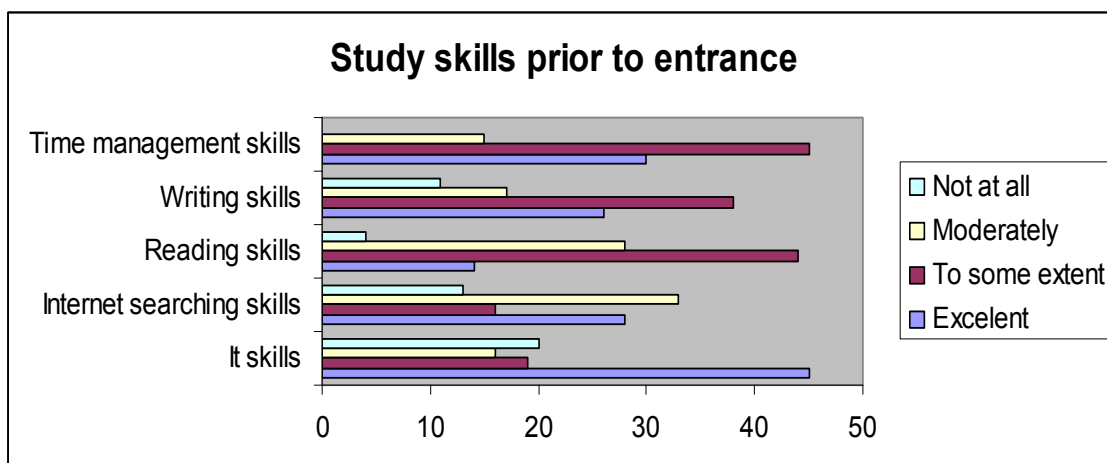


Figure 1: Study skills prior to entrance

Extension of Study Sessions

All respondents (100%) stated that existing study skill sessions were very important and could gain understanding about distance mode learning as they study in inexperienced environment and have to plan all the activities that they have to engage at home and at the institution while working. Further, findings on extension of study skill sessions period, revealed that as given in Table-5 below, 53% of the online learners need to extend the study skill training session to another one week while 46% reported no need to extension as they (80%) do not have time to attend to another session and 16% stated they do not continue their education further. The problem affected by print base learners was the time and the payment were the main reason for extension of study skill sessions.

Table 5: Extension of Study Sessions

Time period	Frequency	Percent
1 One week	47	53
2 Two weeks	1	1
3 No need extension	42	46
Total	90	100

Improvement of the Study Skills

Moreover, findings of the study skills improvement revealed that as shown in Figur-2 below, Internet browsing skill, Interaction and Time management skill were highly developed while media skill is being the lowest. When evaluating on the whole it can be stated that all skills mentioned in the Figure-2 have been developed except media and virtual skills.

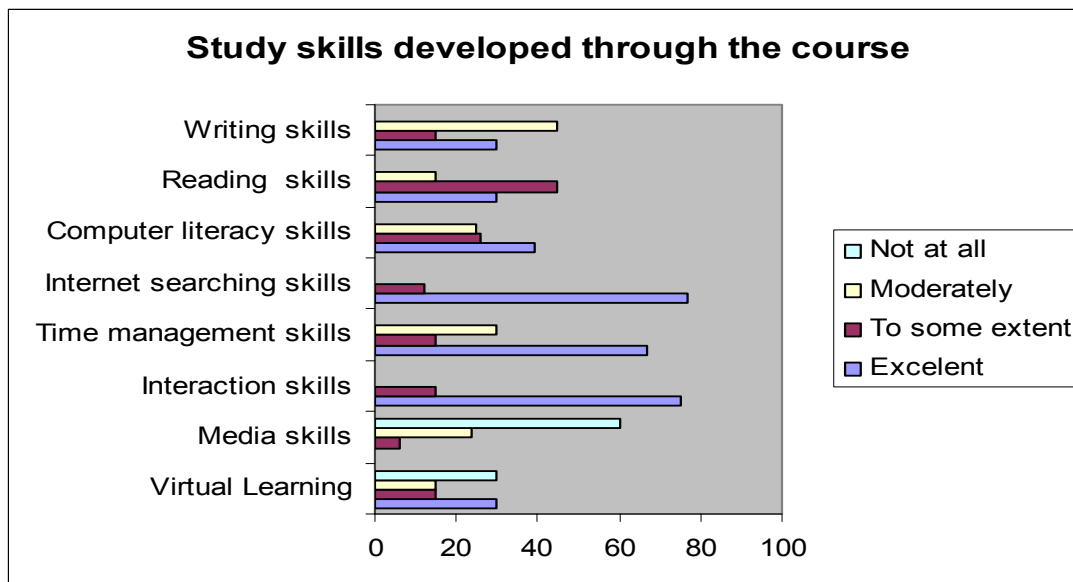


Figure 2: Study skills developed while studying

The significant development can be seen in skill of 'Internet searching skill' when compare to the prior to entrance skills. Interaction skill of the learners was also developed and has taken second place. There is a little improvement in 'Time management skill' of the students when compared to the skills they had when entering to the course.

Data was further analysed to know mostly affected helping hand to develop study skills other than the study skill training sessions and found that 64% respondents stated that 'Tutor and peers' while 21% stated 'Tutor' only as given in Table-6 below.

Table 6: Assistance Given to Develop Skills

Person	Frequency	Percent
1 Tutor	19	21
2 Peers	3	3
3 Tutor and peer	58	64
4 Family member	10	11
Total	90	100

Table 7: Transferring Skills for Studies

Application of study skills	Frequency	Percent
1 To manage time to do all activities	58	64
2 IT skills to write/present assignments	6	7
3 Interaction to share ideas/experiences & for problem solving	19	21
4 1 & 2 answers	7	8
Total	90	100

Findings of the application of skills to continue their studies were also inquired and results are given in Table-7 above.

Majority of students (71) have applied their 'Time management' (19) interaction and (15) 'IT skills' for their studies. Therefore, it can be concluded that Time management, IT and interaction skills were the mostly affected and wanted skills for the Sri Lankan distance learners.

It was also found that 30 students (33% stated) shared their skills with peers in group classes and discussion sessions and online interaction sessions. 49 (54 %) said that key skills like communication, interaction and IT are applied at the workplace while 19 (21%) respondents stated they share skills with their children.

Discussion and Conclusion

What are the skills available with them before registering the distance mode course?

The answer for the question is that all skills were available with them but mostly lacking skills were IT and Internet searching skills because 20 stated that they do know how to use computers and 13 stated that they do not have skills on Information Technology.

What are the skills needed by the Sri Lankan distance learners to continue their studies?

Finding of the study proved that distance learners need different skills to carry on their studies. Time management, IT and Interaction skills were mostly needed skills for Sri Lankan distance learners as highlighted by many authors, Onuka (2012), Johnson (1996). These researchers emphasize management skills are most important and should be taught because the distance learners are expected to do at least 75% of their study/learning by themselves. It is very clear, that the time-management skills need to be taught as it can only be acquired through practice. Further, since academic skills are developed when following a course but key skills are not. Therefore a special course for the key skills development should be introduced or it should be considered when developing curriculum as those skills are transferred to work place, society, family and peers.

How effective orientation/study skill programmes to continue their studies?

All reported that it is effective and could gain knowledge and skill which need to success for their education.

It can be concluded that Time management, IT and interaction skills were the mostly affected and needed skills for the Sri Lankan distance learners.

Same findings as Murphy reports that the study skills which students rated themselves lowest were: media skills. Media skill is the ability to handling and learning from audio tapes and video tapes etc.

It is suggested that course developers should be amalgamate all three domains of skill development, cognitive, affective, and psychomotor when developing courses. Student does not consider about transferring of study skills to others. Therefore course developers should pay their attention on that also when developing curricula for study sessions, training sessions, short courses etc.

How skills are affected/transferred to their studies?

Majority said that skills are used to manage to do all the activities not only for the education but also to life. The second mostly affected is the IT skill which was used to do academic activities as shown in Table 07 above. Thirdly affected skill was an Interaction skill which used for sharing knowledge and experiences with peers, tutors etc.

How they are being transferred their skills to other environments such as peers, workplace, society etc.?

30 students (33% stated) share their skills with peers while 49 (54 %) said they share their skills at the workplace. Further, 19 (21%) respondents stated they share skills with their children at home. As Morgan (2003) describes about generic and vocational skills, generic skills are those broad academic and lifelong learning skills expected of any graduating learner in higher education, including thinking, research and communication skills. Vocational skills refer to the variety of skills specific to one's discipline, profession or vocation that enable students to make the transition and function competently in the workplace.

The findings from the interview done with tutors all stated that 95% questions asked by the students in first year related to the IT background questions. They further stated that the number of questions they asked, is reduced 50% in the second year. In the third year students ask more subjective question than IT questions.

At the interview, tutors revealed that they help students considering their abilities and weakness. As Mitra (2009) states, distance education tutor should have the ability to assess and convey the strengths and weaknesses in learners' work, Sri Lankan tutors have understood level of abilities of their students.

The question asked from the tutors whether you need further training on DE system and role of the tutor. 60% of them stated 'No, they do not need further training or workshop on distance learning while 40% of them are willing to improve their knowledge and skills on tutoring and about the distance mode teaching. Further findings revealed that 75% of the tutors are not permanent staff. But tutors should be trained annually as they are key person in any distance mode teaching and learning system.

Accordingly, it is suggested that

- Orientation period should be extended from one week to two weeks
- Activity base course materials should be written and distributed
- Curriculums should be developed focusing core/key skills development of the learners
- Further training should be given to course tutors on how to do 'effective interaction' with distance learners.
- Short online courses should be introduced to online learners
- Study sessions should be evaluated conducting another research on three domains

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STRESS AND COPING STRATEGIES: A COMPARISON OF MALE AND FEMALE UNDERGRADUATE OPEN DISTANCE LEARNING STUDENTS AT THE WOU PENANG LEARNING CENTRE

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Abstract

This paper discusses a survey that was carried out among open distance undergraduate learners in the Penang Learning Centre of Wawasan Open University (WOU). Though previous research has been carried out about stress, coping strategies and gender differences of coping styles among undergraduate students studying in regular university settings, very little has been done in the open distance learning arena which constitutes students who have to be self-directed and balance their studies with their careers, home and social responsibilities. Therefore, this study was conducted to identify the coping styles used by the learners and to examine whether there was a difference between the types of coping strategies when comparing male and female open distance learners. The participants were both male and female students from the various undergraduate programmes. There were 108 male students and 140 female student respondents. Their ages ranged from 21 to 60 years. The quantitative approach was employed for this study. Questionnaires called 'Adult learner stressors in open distance education and the use of social support' and the Coping Inventory for stressful students (CISS), developed by Endler and Parker (1999) were used. The key findings of this research show that there is no significant relationship between gender and both Emotion-oriented coping and Task-orientated coping strategies. The findings also showed that among all the respondents task coping strategies occurred slightly more than avoidance oriented strategies. The least occurring category was emotion oriented strategies. One interesting finding was the fact that when under stress, male WOU students prefer the avoidance-oriented coping strategy more than the females. This was in contrast to several studies that had suggested earlier that male students prefer task-oriented coping strategies to female students (Broughham et al., 2009; Eaton & Bradley, 2008). This paper also discusses practical implications and remedial measures that can be taken to address maladaptive coping issues. Recommendations for future research are identified.

Keywords: *Coping strategies, stressors, social support, open distance learning*

Introduction

Adult learners are the fastest growing population of open distance education students (Kim, Collins, Hagedron, Williamson & Chapman, 2004). As most of them shoulder educational, family and work responsibilities, they are attracted to open distance education degree programs which provide them the opportunity to maintain their careers and family life while pursuing a degree.

When people are juggling a variety of roles, they must be able to manage their time and balance their responsibilities to persist in their studies. In order to meet their educational goals, adult learners have to cope with many stressors and demands of their personal and academic responsibilities (Tressman, 2002). Adjusting to distance education is a major transition for students as the stresses of life as an undergraduate distance learner are multifaceted.

As early as 1989, researchers had already come to a conclusion that undergraduate or college life may be the most stressful time in a person's life (Ramsey, Greenberg & Hale, 1989). This has been shown as the case in higher education through distance learning (Ramos & Borte, 2012; Capdeferro & Romero, 2012). Academic, interpersonal and financial challenges require adequate coping responses in order to avoid maladjustment and this has been suggested to be a major cause of stress, poor academic performance and dropouts (Baker & Siryk, 1984). Environmental causes of stress including studying in English, culture shock (Pabiton, 2004) as well as loneliness or isolation (Pabiton, 2007) have been found to be highly stressful too.

Objective of the Study

This study was conducted to identify the coping styles used by students to deal with stress as well as to investigate whether there was a difference between the coping strategies of male and female open distance learners.

Research Questions

The research questions of the study are as follows:

1. What are the types of coping styles used by students to deal with stress?
2. Are there any differences between coping strategies of male and female open distance learners?
3. Do the types of coping strategies used vary according to age?

Significance of the Study

This study was conducted to bridge a part of the gap in the area of stress, coping strategies and gender differences, an area which has not been well studied among learners in open distance education. It will help to identify the coping styles used by the learners and to examine whether there is a difference between the types of coping strategies when comparing male and female open distance learners. These styles have to be studied for the purposes of creating a new paradigm to help students deal with stress, discourage maladaptive and unhealthy styles of coping and encourage healthy styles instead. Understanding gender differences are also important as they are a part of the social implications from the standpoint of universities who deliver open distance courses to their students. The results will help universities organise and design their first level courses in better way by helping students identify their stresses and coping strategies in effective ways.

Literature Review

Stress and Coping Models

There are two main stress and coping models. The first one is the medical-biological model (Selye, 1956) which examines stress from the aspect of the human body's ability to respond to and adapt to stressors. This model describes the body's biochemical defences that physiologically and psychologically respond to conditions that threaten or challenge us. In this model, there are three stages in handling the stress that comes about from biological agents, social factors and psychological or cognitive factors. In the first stage, the alarm reaction, the body becomes overwhelmed and enters a second stage called resistance. This is a different biological process that can include appraisal, coping and emotional responses. If the exposure to the stress continues at the third stage, exhaustion is the result. The body's ability to adapt to stress is finite and with continued exposure, it gradually wears out.

The person-environment model focuses on how external (the environment) and internal (within the person) forces produce stress reactions that occur when dealing with stress (Lazarus, 1966). What makes an event stressful is the degree to which it is perceived as threatening, harmful, or challenging (Lazarus & Folkman, 1983). When an event is appraised as challenging, overcoming the stressor is hopeful, but when it is considered to be threatening or harmful, the need to avoid the stress becomes necessary.

Coping Strategies

Coping strategies are a repertoire of behaviours, conceptualised as a multidimensional process an individual utilises to reduce the stressful condition. They include cognitive and behavioural efforts. Coping strategies can be grouped into three main classes: *task-oriented*, *emotion-oriented*, and *avoidance-oriented*. The *task-oriented* strategy is problem-focused. It involves taking direct action to alter the situation itself to reduce the amount of stress it creates. According to Carver (1997), task oriented coping strategies include "active coping", which means taking action or exerting efforts to remove or circumvent the stressor by "planning", thinking about how to confront the stressor and planning one's coping efforts; "acceptance", accepting the fact that the stressful event has occurred and is real; and "positive reframing", making the best of the situation by growing from it or seeing it in a more positive light. This has been further emphasised by Aspinwall & Taylor (1992) that students who employed the task oriented strategy were more likely to succeed in college. Endler and Parker (1999) have suggested that, in the long run, task-oriented coping is the most efficacious strategy.

In the emotion-oriented strategy, efforts are directed at changing emotional responses to stressors. It also includes the use of indirect efforts to adjust to stressors by distancing oneself, evading the problem, or engaging in unrelated activities for the purpose of reducing feelings of stress (Roth & Cohen, 1986). Emotion-focused coping strategies aim to reduce and manage the intensity of the negative and distressing emotions that a stressful situation has caused rather than solving the problematic situation itself. These coping strategies thus help us feel better but don't solve the source of our distress. Hence, emotion-oriented coping is considered a less adaptive style, since the student concentrates on his/her emotions, which, additionally, fosters agitation and anxiety and prevents effective learning. Avoidant strategies, considered as a maladaptive coping mechanisms includes "denial", which can be defined as an attempt to deny the problem by giving up or withdrawing efforts from the attempt to attain the goal which is affected by the interference of the stressor. Aspinwall & Taylor (1992) have illustrated that students who employed avoidant coping strategy were expected to be less successful at adjustment to college. In the long run, non-productive coping is very detrimental as it leads to a dysfunctional life.

Gender Differences

There has been limited but conflicting discussion in traditional classroom settings about gender differences in the use of coping styles (Brougham, Zaill, Mendoza & Miller, 2009). Traditionally task oriented coping has been seen as a male domain as superior to women's emotion-oriented coping strategy. Data has suggested that females employ emotion oriented coping and avoidance coping strategies more frequently than males (Brougham et al., 2009; Eaton and Bradley, 2008). Ptacek, Smith and Zanas (1992) put forward the explanation that men and women have different coping strategies because they are socialised to deal with stressful events in ways that are very different. Other researchers like Hamilton & Fagot, 1988; Shinn, Rosario, Morch and Chestnut, 1984, have proposed and argued that there are no gender differences that are associated with coping strategies. Shinn et al. (1992) also argued that when men and women hold similar roles, their gender differences do not affect the coping strategies they use.

Methodology

Research Design and Sample

A random sample of undergraduate students (N = 248) participated in this study. There were 108 male students and 140 female student respondents to the questionnaire. Their ages ranged from 21 to 60 years. The questionnaire which also included socio-demographic information was distributed to participants at the end of the tutorial sessions and also carried out online. The completion of the questionnaire was voluntary and the responses were guaranteed confidentiality. The respondents of the survey were undergraduates who registered under the various programmes of study in the Penang Regional Centre of Wawasan Open University.

The instrument used for this survey was the Coping Inventory for Stressful Situations (CISS) developed by Endler and Parker (1990, 1999). This is a 48-item self-report inventory that evaluates the coping strategies that are used in stressful situations. The CISS has been proven as displaying remarkable psychometric consistency. It has also been described as "probably the best measure of its kind" (Stein, 2001) and has established itself as a highly valid and reliable instrument (Rafnsson et al., 2006; Ramli et al., 2010).

The items are divided into three separate coping scales that are used to measure *task-oriented* coping, *emotion-oriented* coping and *avoidance – oriented* coping. Avoidance-oriented coping is further divided into another two subscales, a Distraction scale and a Social Diversion Scale. Respondents have to determine on a five-point Likert-type scale the frequency of given behaviour in stressful, difficult situations. The items related to each scale are located randomly throughout the questionnaire to avoid the order of the questions having an effect. Scores are formatted in three scales: task-oriented style; emotion-oriented style and avoidant style. The latter can be divided into distraction seeking, and social diversion.

Data Analysis

Profile of Respondents

The profile of the respondents who took part in this study is depicted in Table 1 below.

Table 1: Demographic Information

Demographics	Number of Respondents	Percentage
Gender		
Male	108	43.5
Female	140	56.5
Total	248	100.0
Age Group		
21-25	66	26.6
26-30	62	25.0
31-35	52	21.0
36-40	31	12.5
41-45	18	7.3
46-50	11	4.4
51-55	4	1.6
55 above	4	1.6

The profile shows that females outnumbered males in responding to the questionnaire at 56.5% of the 248 respondents. The majority of the respondents are from the younger age group of 21-25 years at 26.6% with the least responding group being the one above the age of 51 (1.6%).

Reliability and Validity

In order to understand whether all the questions in this questionnaire reliably measure the same variable (coping strategies); a Cronbach's alpha (α) was run on the sample collected. Cronbach's alpha is the most common measure of internal consistency (test of reliability) regularly used for a multiple Likert scale questions.

The Task coping strategy subscale consisted of 16 items ($\alpha = 0.897$), the Avoidance coping strategy subscale consisted of 17 items ($\alpha = 0.808$), and the Emotion coping strategy subscale consisted of 15 items ($\alpha = 0.877$). The coping inventory was found to be highly reliable (48 items; $\alpha = 0.865$). Following George and Mallery's (2003) rule of thumb on Cronbach alpha interpretation, any value of above 0.80 is considered to be a good indicator of internal consistency.

Gender Influences

A multiple regression analysis was conducted, by holding constant the other explanatory variables in the regression the gender variable have a significant relationship upon dependent variable of “Avoidance”, at the 1 percent significant level. When under stress, male WOU students prefer the coping strategy of “Avoidance” more than the female students. The average score of “Avoidance” of a male student is 0.235 higher than that of a female student (Table 3).

Taking from the results of the multiple regressions above, a Mann-Whitney U test was conducted to evaluate the hypothesis that males are more prone to using Avoidance coping strategy than female students. The results of the test were in the expected direction and significance, $z = -2.12$, $p < 0.05$. Male students have an average rank of 134.37 than female students’ average rank of 114.99. This reaffirms our earlier conclusion. This is in stark contrast to several studies that seem to suggest that male students prefer Task-oriented coping strategies to female students (Brougham et al., 2009; Eaton and Bradley, 2008).

Table 2: Descriptive Statistics

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
A1	243	3.22	.075	1.174
A2	246	3.00	.073	1.146
A3	244	2.38	.081	1.263
A4	245	3.11	.088	1.371
A5	244	3.02	.086	1.338
A6	246	2.37	.073	1.152
A7	246	2.88	.091	1.429
A8	245	2.51	.082	1.289
A9	246	1.81	.071	1.116
A10	246	2.43	.075	1.182
A11	246	2.85	.087	1.363
A12	245	3.30	.083	1.305
A13	246	3.46	.076	1.194
A14	246	2.58	.084	1.316
A15	245	2.95	.088	1.371
A16	244	3.11	.074	1.151
A17	245	3.29	.186	2.913
Valid N (listwise)	235			

Looking at the frequency distribution, it would seem that male students prefer to focus their attention on 3 avoidance activities namely; A12: Go for a walk or other form of exercise, A13: talk to someone whose advice I value and A17: watch TV. Talking to someone seems to be the most popular Avoidance-oriented strategy with a mean score of 3.46 (SD = 1.194). Going to a party (A9) seems to be least preferred Avoidance-oriented strategy among these respondents with a mean score of 1.81 (SD = 1.116).

It is interesting to note that there is no significant relationship between gender and both Emotion-oriented coping and Task-orientated coping strategies. This perhaps fits well within the psyche of adult learners who are more matured and do not succumb to emotions as a way to deal with stress. A more comprehensive study would have to be done to investigate this matter further. The findings also showed that with all respondents task coping strategies occurred slightly more than avoidance strategies as given in Table 3. The least occurring category was emotion strategies. In another study by Emmanuel (2011) using a similar sample of students, the initial findings of raw scores showed similar results. The findings also showed that students who persisted in their studies used more task-oriented coping strategies while non-persisters used more avoidance coping strategies.

Table 3: Statistics Showing the Types of Strategies used by All Respondents

	A_Average	E_Average	T_Average
N Valid	246	246	248
Missing	2	2	0
Mean	2.83922	2.78035	3.52595
Median	2.88235	2.80000	3.56250
Std. Deviation	.709190	.725964	.685186

Age Influences

While for the age variable, only the age group of 21-25 years (Age1), 31-35 years (Age3) and 51-55 years (Age 7) are significantly correlated to “Avoidance”, at the 10 percent significant level. The average score of “Avoidance” of a student in the age group of 21-25 years is 0.588 ($t = 1.671$, $p < 0.10$) higher than the student from the age group of 56 years and above, *ceteris paribus*. The younger ones seem to give up (by using the avoidance strategy) more easily compared with the matured students. Interestingly, in a study conducted by Prakash (2010), age was the least significant factor of resilience among learners in an open and distance learning environment.

Similarly, by holding other variables constant, the average score of “Avoidance” of a student in the age group of 31-35 years and 51-55 years are 0.677 ($t = 1.906$, $p < 0.10$) and 0.927 ($t = 1.906$, $p < 0.10$) higher than the student from the age group of 56 years and above, respectively. The average age of Malaysians entering the world of matrimony is 28 (World Marriage Data, 2012). Students in the 31-35 age brackets may fall under this category of adults who would be planning a family or have very small children and thus the students may not be able to cope effectively.

As for the students in the age group of 51-55, they may face the challenges of being care-givers for aged parents, obtaining funding for their studies and even a sense of discomfort studying alongside ‘tech-savvy’ students during tutorials. The fact that the open and distance learning environment runs primarily on a technology based platform itself is also a major challenge.

Table 4: Co-efficients ^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	2.250	.347		6.484	.000
Male	.235	.089	.165	2.651	.009
Age1	.588	.352	.368	1.671	.096
Age2	.526	.352	.321	1.493	.137
Age3	.677	.355	.390	1.906	.058
Age4	.066	.362	.031	.181	.856
Age5	.331	.379	.119	.874	.383
Age6	.191	.399	.056	.477	.634
Age7	.927	.486	.166	1.906	.058

a. Dependent Variable: A_Average

Discussion

Stress has been defined by Weiten (2007) as a complex concept which is explained as any circumstance that threatens or is perceived to threaten one's well-being and thereby tax one's coping abilities. Coping strategies are defined as the person's constantly changing cognitive and behavioural efforts to manage specific external or internal demands that are appraised as taxing or exceeding the person's resources (Supe, 1998).

This study focused on three main coping strategies for stress, namely, task-oriented; emotion-oriented; and avoidance orientation. The key findings of this research show that there is no significant relationship between gender and both Emotion-oriented coping and Task-orientated coping strategies. The findings also showed that with all respondents task coping strategies occurred slightly more than avoidance strategies. The least occurring category was emotion oriented strategies. One interesting finding showed that when under stress, male WOU students prefer the avoidance-oriented coping strategy more than the females. As stated earlier, this is in contrast to several studies that had suggested that male students prefer task-oriented coping strategies to female students (Broughham et al., 2009; Eaton & Bradley, 2008). This avoidance-oriented strategy may only provide a form of temporary relief from a problem but will not be effective as it does not provide solutions to the stressors.

There has been some research that indicates that Asian students prefer to use the avoidance oriented coping strategy (Pabiton, 2004) and this may be related to the fact that they come from collectivist cultures which are more teacher centric. Since, open distance education is more student centric, the stresses that arise from this new paradigm for students may cause them to use the avoidance oriented strategy rather than confronting the stresses. Yet, this does not explain why in this survey, the female students used less avoidance-oriented coping than males. One possible reason could be that the female respondents had extraversion personality traits. Research has shown that individuals who are high in extraversion are cheerful in disposition and motivated (Watson & Clark, 1992). Consequently, it has supported that these individuals engage in task-oriented coping when a stressor is encountered (Vollrath, 2000; Velting, 1999). But this needs to be investigated further using personality testing and a qualitative approach so that deeper insights on the types of personalities and the factors that encourage the student to select a particular coping strategy can be identified.

Conclusion

The findings of this study indicate a need for stress management programmes for all open distance learners especially the students who increasingly use the avoidance oriented strategy. One approach is to attempt and eliminate, or at least reduce, the most commonly identified sources of stress among these students. Another approach is to conduct workshops on stress, effective coping strategies through the academic years either face-to-face or online. It is important to maintain a well-balanced academic environment for improved learning experience.

Academics and exam schedules can be reviewed and better interaction with the faculty and proper guidance, advisory services and peer counselling at the main campus and the various regional centres could go a long way to reduce stress level and enhance coping strategies among students. As for the course design, it is important that instructional design, content and interactions be a meaningful experience for students that help them in their progress consistently (Emmanuel, 2011). The presence of counsellors in the Regional Centres may help students to overcome stressful conditions by being exposed to therapies that incorporate elements of task-focused solutions, prioritising responsibilities and developing adequate problem solving techniques when confronted with stressful situations.

Finally, enabling students to see how their studies are relevant to their career pathway, personal development and financial remuneration can be instrumental as the greatest form of intrinsic motivation for them to deal effectively with the stressors that arise during their tenure as an open distance learning student.

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HINDRANCES IN APPLYING FACE-TO-FACE AND ONLINE TUTORIALS: UNIVERSITAS TERBUKA CASE

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Abstract

Tutorials in distance learning mode is served to students as an aid to increase their understanding in learning the materials of modules. Universitas Terbuka (UT) has implemented face-to-face tutorial (tutorial tatap muka/TTM) since 1984. Meanwhile Tutorial Online (Tuton) has been applied since 1999. These two modes have their own characters and the way UT manages them is different. There are some hindrances in handling and managing these two modes of tutorials. Managing Tuton is handling in the Head Office and Faculties are responsible for managing the academic side. The 39 Regional Offices across the country do not manage this mode of tutorial. However, managing the face-to-face (ftf) tutorial is the responsibilities of the regional offices. This paper will show all the readers and audiences about the hindrances of handling the two modes of tutorials faced by either the head office or the regional offices at UT. Discussing these hindrances is important for UT to revise the modes in implementing for increasing qualified services to students.

Key words: Tutorial, online, face-to-face

Introduction

Universitas Terbuka (UT) has done a great task to ensure that tertiary education in Indonesia is accessible, affordable and relevant to the needs and aspirations of industry and society as a whole, moreover it should be attending by people in remote area through over the country. UT has a mandate to provide tertiary education to everyone prefer to learn. To fulfill the mandate then UT has to implement the open and distance learning system.

Implementing open and distance learning system in Indonesia is very complicated since the geographic of this country. Indonesia has a large number of 5.193.250 km² including lands and seas, Indonesia is involved in the 7th largest country in the world and the 2nd largest in Asia. Indonesia has about 17.508 islands and the lands are about 1.919.440 km² the rest is seas. Indonesia has 34 provinces which are spread on five big islands and some small islands as shown on the map below. UT students are spread out the country and in 22 cities abroad. Nowadays, UT served about 543.000 students and alumni is about 1.250.000 people.



Students being the UT's customers should be given an opportunity to relate their experiences with tutorials and demonstrate to what extent this critical service meet quality criteria. Providing the best service to its community UT has its system of quality assurance. Quality assurance is one way of getting through to improve the managing of open and distance learning system. Center of quality assurance in UT has developed the guide for implementing the tutorials in UT. There are two modes of tutorials which are handling by UT. The first is face-to-face and the second one is online tutorial. Tutorials appear useful and indispensable to students.

UT has been implemented both face-to-face and online tutorial. There are hindrances to apply both modes of tutorials in UT. Managing these modes of tutorial UT has divided the task on handling face-to-face is the Regional Offices (ROs) which are stated on 39 places in the country. Online tutorial is running by Faculty in Head office of UT. Both sides have faced hindrances in managing the tasks to provide the need of satisfying students. UT needs to evaluate the system of delivering tutorials, if they do not satisfy they are disillusioned, dissatisfied and disturbed. Such dissatisfactions can threaten the existence of the university through dropouts and withdrawals. Given this premise, it is clearly imperative that educational institutions continuously focus on quality processes and chief among the processes are tutorials. It is critical to ensure quality in tutorials and this paper is one small way of trying to fill the void. Tutorial in open and distance learning system is also part of service for students to study and the cornerstone of university quality.

Literature Review

Huge of studies have been done about the learning support in Open and distance Learning (ODL). However most of the studies did not focused on the hindrances of implementing modes of learning support but they focused on how learning support increased the quality of handling the process of learning support. These tutorials therefore must be guided by the need to satisfy as stated on African Educational Research Journal Vol. 1(2), pp. 152-160, October 2013 Full Length Research Paper and motivate clients so that they yearn for more and better quality education that makes them worthwhile stakeholders and collaborative partners in both public and private sectors of the economy (Tierney, 1998). Another study, as Tierney (1998) suggests, universities must therefore focus on students, listen to their needs and desires, and serve them in appropriate ways. One way to ensure students'

satisfaction is to provide quality tutorials. Tutorials facilitate the exchange of ideas and promote interpersonal relationships (Makoni, 2000). Majoni and Chidakwa (2004) who found out that students were not completing their research projects on time due to a number of factors all of which are related to the issue of quality. However, there were no matching resources to cater for the growing student population. The answer in such a case is to focus on quality. Nyota (2004) found out that ZOU students are mature, some of them parents who are already in employment. Some of these students hold senior positions at their workplaces. Thus, these students expect nothing short of quality services. Further, Nyota (2004) pointed out that ZOU students come from a variety of professions and backgrounds. In this respect, they are well positioned to assess the quality of tutorials. Another study was by Chidakwa and Majoni (2005) on the role of tutorials in distance education. With regards to weekend school tutorials, Chimedza in the New Student's Orientation Handbook (2005) challenges students to remember that when they come for the face-to-face sessions, they should not expect to be lectured but to be tutored. Chiome and Mukeredzi (2006) found out that there was a marked drop in tutorial attendance by students of the Zimbabwe Open University. This shows that more attention should be paid to the quality of tutorials to enable an improvement in attendance. This study revealed that tutorials are indispensable. The content of tutorials helps to guide isolated students. This further reinforces the view that the tutorials must be of high quality if they are to serve this purpose. Brown et al. (1997) describe these benefits as:

1. Making mature students feel welcome; and
2. Treating mature students appropriately.

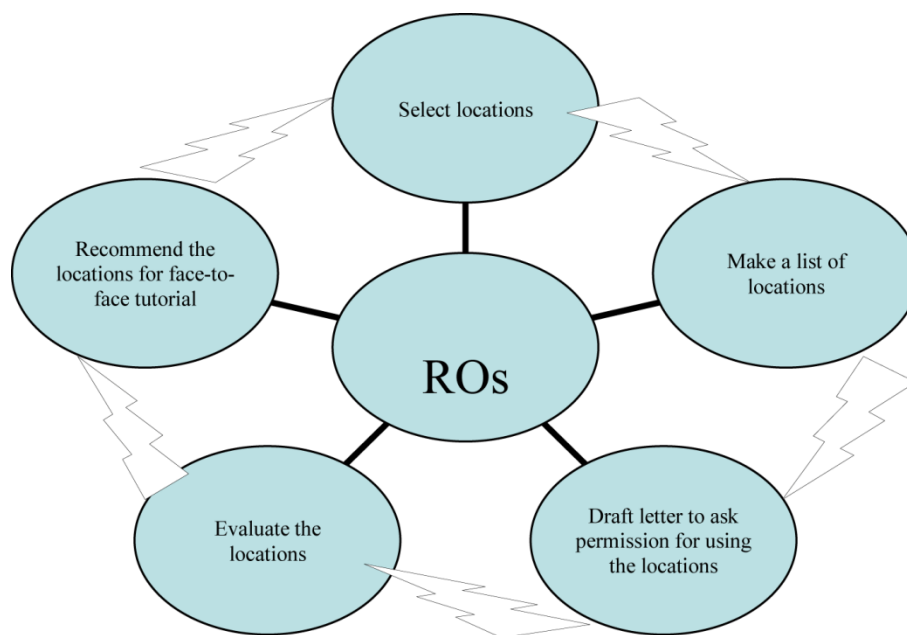
In other words, service delivery especially in a university, as Davies and West-Burnham (1997) observe, is about doing things differently and trying to use the power of ideas to change the ways service is provided.

There are also many research done in UT regarding face to face tutorial and online tutorial. Herman (2012) stated that quality of services, tutor's teaching ability, mastery of subject, interaction or communication ability, influence students satisfaction. Zuhairi, Julaeha, and Sinar (2013) found that there has been an increasing number of students who are interested in online tutorial. The number of students participating in this kind of tutorial keep increasing from time to time. Suryanto (2013) stated in his dissertation that the process of tutorial gave the greatest effect on students' achievement. Fatimah, Andriansyah, and Wahyuni (2013) mentioned several factors affecting the success of online tutorial. According to them the following factors influencing the process of online tutorial; students' ability to use computer and internet, tutors' ability to provide good materials and active in communication with their students, and the diversity of students' cultural background.

Managing Face-to-Face Tutorial in UT

This learning support is responsibility by the ROs. Quality assurance center has been published the procedure on handling the process of face-to-face tutorials in ROs. There are some procedures that ROs need to handle for implementing face-to-face tutorials. Each ROs has to implement all of the procedures above in running face-to-face tutorial.

Procedure for Selection Locations of ftf Tutorial

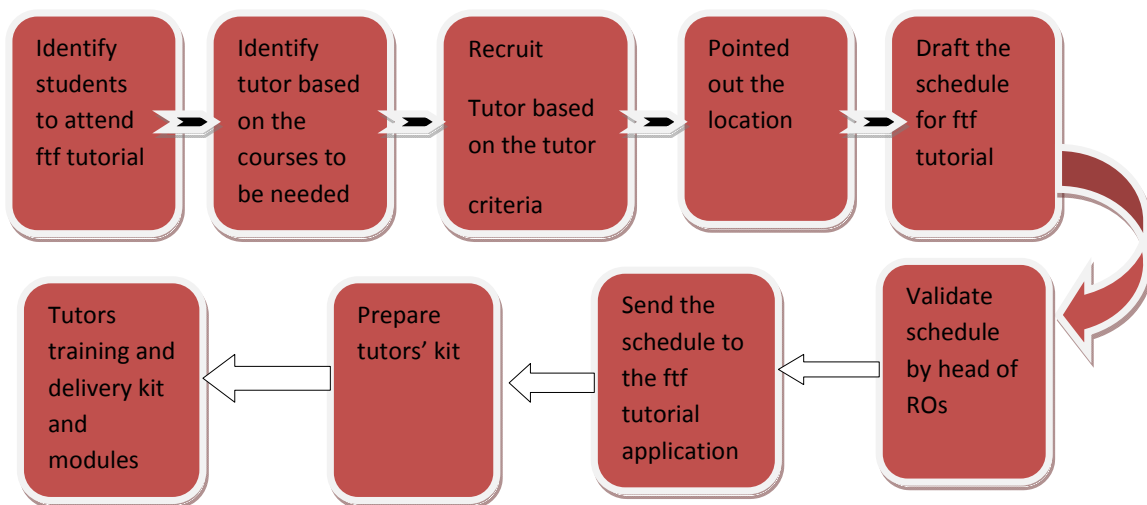


Hindrances

Some schools ignore ROs permission letters for using their schools for ftf tutorial. Most head of schools are not given any replied to ROs about permission to use their schools. At last ROs could not achieve the procedure of selection of the locations for ftf tutorial, when the auditors from the quality assurance audit ROs will get low remarks on selection of location since the locations are not met the need as stated on the procedure. ROs have to use at least junior high school for running ftf tutorial unfortunately ROs only gets replied from the Primary schools. The location has also have good facilitation such as clean toilets, canteen, prayer room and easy to get by the students who are come from the suburbs. Only about 20% of the criteria ROs can achieve about the facilitation.

Procedure for ftf tutorials in terms of the distance travelled, the majority of the students travel well in excess of 40 - 100 km to come to the location for tutorials. In terms of the distances travelled by students to attend tutorials, they encountered travel challenges considering the fact that they travelled distances well. Moreover they have to get the location in a minimum facilitation since there is no canteen to get food and prayer room for most of students in Indonesia need.

Plan

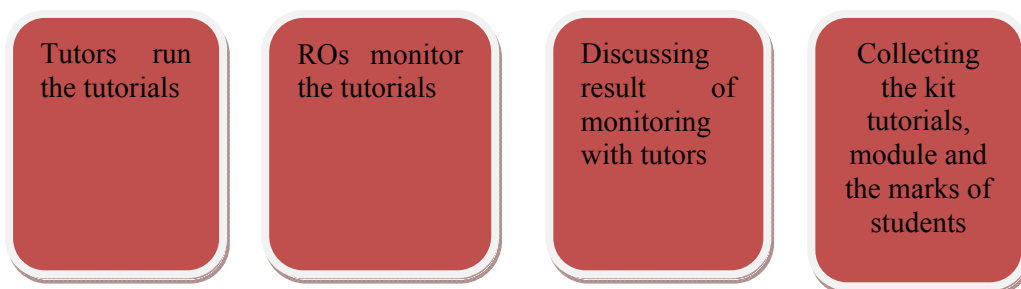


Hindrances

ROs have to grouping the students who are taking the same courses or in the same semester at least 30 students in group. To fulfill the total numbers of 30 is difficult since the students are not enough to group in the same place. Mostly ROs just group them in 15 – 25 students.

To identify tutors who are eligible and prefer to become tutor Ftf in the suburb is one of the hindrances faced by ROs. The problem is if the tutor only holds one class on the suburbs means she just received a little amount of fee for going around 8 hours driving car. Most of the ROs are stated on the capital city of provinces. It should be easy to get tutors in the capital city since most of other universities are stated on the capital city of provinces. The tutors who are eligible to become tutor according to the criteria for tutor have to have Magister qualification, however eligible people in the suburbs are very rare. Especially tutor for special courses.

On Going Tutorials

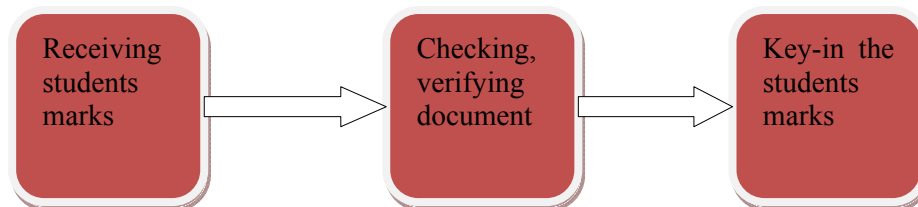


Hindrances

When running ftf tutorials some times tutor faced problems because she/he was sick or has another thing to do and there is no extra tutor available to change then the tutorial will be canceled. If it is happened then the schedule has to be change and there will be problems from the students. Students are come from the deep parts of the suburbs which took 3 up to 4 hours by motorcycle. It will take other fee for them to buy gasoline and time to join the ftf tutorial.

Tutors must seriously consider students with problems and teach beyond timetabled sessions. Students need permanent classrooms where they can discuss freely beyond the lectures. More over, transport for students to weekend tutorials must be counted when the class cancelled. Improve on course delivery techniques in tutorials are needed to do by tutor.

Arranging the Result of Tutorials



Hindrances

Most tutors are not punctual to submit the result and documents to ROs. Delay of submitting documents and students marks of tutorials will be pending the process of verifying and key-in. ROs need to call and remind the tutors to submit it punctuated again and again.

Management of Online Tutorials at the Faculties

There are few steps of how to manage the online tutorials at the faculties at Universitas Terbuka.

Determining Course Managers

As UT determined that all courses should have online tutorials in 2014. In 2013, the heads of departments at the four faculties at UT sit together with all lectures determining who will be responsible for writing the contents of the tutorials that consist of 8 initiations and 3 tasks for each course. As lectures, they are responsible for tutoring 12 credits per semester which is equal to four courses at least. Once who will write that courses is determined, they become course managers for the courses they are responsible. If the numbers of the lectures are less than the numbers of the courses the hands of the departments should find lectures from other universities to train to be a tutor. They have to make sure that the greeting for the students is available, the initiations are available as well as the tasks.

Hindrances: Online tutorials last two months or 8 weeks. For the first week, there should be greeting and first initiation. For the second week, there should be second initiation, etc. The first, second, and third task will be available on the third, fifth and seventh week respectively. Sometimes there are tutors who do not provide greeting or even first initiation in the first week. They are not available until the second even third week. The students protest it and send an email to the head of the department reporting this situation. She / he will send a notice through email to the tutors. UT waits until the fourth week, if for some reason, some of the tutors do not perform their task, UT breaks the contract with them.

Seeking Tutors

Since 2014, UT has had determined that all courses it offers should have online tutorials. Therefore, all course managers had to find and recruit people who were willing to be recruited as tutors and were willing to be trained. This recruitment is coordinated by the head of a department. Once, they managed to find them, they were asked whether they were willing to be trained and became tutors. If they said yes, they would be trained by a trainer from the centre at UT which is called PAU (Pusat Antar Universitas / inter – universities centre). Then they signed a contract for two semesters.

There are two ways of recruiting tutors, one, UT puts on an ads through its website. Second, course managers call their colleagues at other universities and persuade them to be tutors.

Hindrances: tutors recruited through the ad, their commitment is still questionable, that is not the case with tutors recruited through our colleagues because they know them well. All of them are not familiar with our program used in the tutor which is moodle 2.7. Even though they have been trained, they sometimes do not know how to tackle problems faced by students concerning the program.

Training the Tutors

In 2015, UT uses moodle 2.7 for the online tutorial. We invited all tutors to train. Unfortunately, not all came.

Hindrances: those who did not come could not perform well during tutorial session. They sometimes forgot to click a particular so that their first initiation cannot be seen by the students. Complaints arrived and the head of the department either let the tutors know or she/he click it for them.

Tutorial Process

Students who register a particular course, they are automatically registered in the online tutorial for the same course. Once they are registered they have to follow all the eight initiations and three lasts if they want to get a full mark. Their mark will contribute 30% to their overall mark for the course as long as their mark the final exam is at least 30. In the initiations, tutors will give questions or materials that students have to respond. And tutors will give feedback to their response. The same thing happens in the tasks. One month after the end of the tutorial session, tutors will give their mark based on their active involvement in the tutorial to the exam centre in which their mark will be combined with their final exam mark. This will be their final score. Every tutor has to make a report on each tutor for which they are responsible.

Hindrance: Tutors are not familiar with moodle 2.7 as a result of their absence when there is training. Student's computers cannot run the program as a result of different specifications.

Supervising Process

Course managers are responsible for supervising tutors in running tutorial session. If there are some tutors who fail to do that, they take it over. At the end of tutorial session, they make a report on it. And this will end up determining our contract with the tutors.

Hindrances: Sometime some course managers fail to do supervision because this is not really their main job. As a result, the students get delayed feedback from them.

Marking Process

Tutors give mark based on the following scheme :

$$8 \frac{\text{initiations}}{8} \times 50 + 3 \frac{\text{tasks}}{3} \times 50$$

If they are inactive, they get 20. If they are inactive, they get just open the initiations or tasks but not get involved in them, they get 30. If they are active, the above scheme will apply.

Hindrances: They do not have strategy how to make computer mark itself instead of making manually.

Process of Reporting

After all the tutors give the marks, they have to put them in a report and send it through an email to the vice dean of internal affairs the head of the department. If they are responsible for 4 courses and 2 courses they supervise, they have to make 6 reports. They have to send the reports to the vice dean of internal affairs and to the head of the department.

Hindrances: They do not send their reports on time sometimes. This may be the result of being a tutor is not their main job. So, making the report is not their priority.

Evaluation of the Tutors

The tutors are evaluated based on the hits they have, the reports they send contain' their presentation in the forms of 8 initiations and 3 tasks and the protests they get from the students. The more hits they have, the earlier they send in the reports, the better they are. If they put their initiations and tasks on time, the more comprehensible the content, the better they are.

Hindrances: almost none

Conclusions

The tutorial package has been seen as of low quality as tutors are sometimes absent from tutorials or they come late in the case that they attend. Teaching resources are core to the work of distance education lecturers but these were not availed to tutors. Another important finding was that media for presentation of tutorials should be integral to the work of distance education lecturers. There was waning commitment from the underpaid lecturers who were victims of the economic melt down. Lecturers used the tutorial method when their students preferred the lecture method.

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LEARNER'S BIG DATA FOR SMART LEARNING

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Abstract

Smart learning is personalized learning in smart environment. When learners who want to learn with optimal learning device and personalized learning model, learning strategy and plans for the learner are established dynamically and learning form of real learning environment can motivate the learner. Smart environment and smart learning surpasses the paradigm of 'typical learning' so that various data and information about learners could be produced and manipulated. And smart learning environment would be melded together with learner's life environment and cyber learning environment and produce new learning resources and new learning contents. The new learning resources and new learning contents produced by smart learning are circulated among learners, instructors and learning contents and make interactions among the learners, instructors and learning contents. The new learning resources and new learning contents produced by smart learning and interactions among learners, instructors and learning contents are based on learner's big data so that learner's Big Data management model is necessary for smart learning services. But there was concrete definition of learner's Big Data and learner's Big Data classification standards. In order to build smart learning services, smart learning system and learning cloud, learner's Big Data should be collected and manipulated by learner's Big Data model, definition of learner's Big Data and learner's Big Data classifications. In this paper, we analyze the previous learner's information of KNOU and other university, e-portfolio of e-learning environment and smart learning services. From the analysis results, we define that learner's Big Data is high volume, high velocity, and/or high variety information assets that can be produced by learners, instructors and learning contents during learning activities and learner's real life, and can create new values for learners through analysis and management. Personalized learning services and adaptable learning contents can be supplied based on learner's Big Data. In order to classify the KNOU learner's information, we define classification standard of learners' Big Data as general learner's preference information, learning relationship information, university affair information, learning device access history and characteristic information. Lastly we define the characteristics and management methods of KNOU learner's Big Data and propose learning cloud system that can deal with learner's Big Data and support smart learning service.

Introduction

As convergence of ICT, internet service speed, smartphone functionality and IT services development are enhanced, volumes of data and multimedia contents for whole society becomes huge and various and intimate-life IT services produces huge information and data. Big Data has been defined by various researchers and companies. And we try to define Learner's Big Data based on Gatner's Big Data (Manyika, Chui, Brown, Bughin, Dobbs, Roxburgh, Byers, 2011), since Gatner's Big Data definition is abstract and has wide concept approach. Definition of Big Data of McKinsey Global Institute is that Big Data refers to datasets whose size is beyond the ability of typical database software tools to capture, store, manage, and analyze (Manyika, Chui, Brown, Bughin, Dobbs, Roxburgh, Byers, 2011). Big data technologies describe a new generation of technologies and architectures, designed to economically extract value from very large volumes of a wide variety of data, by enabling high-velocity capture, discovery, and/or analysis (Gantz, Reinsel, 2011).

But there was many kinds of Big Data definition and Big Data classification, collection, manipulation approaches. But, there was few learner's Big Data researches for smart learning. Especially, in order to build smart learning services, smart learning system and learning cloud, learner's Big Data should be collected and manipulated. Learners' Big Data model is building-block and necessary for smart learning services and smart learning architecture (Chung, Kim, Lee, Jung, 2014).

In this paper, we propose learner's Big Data analyzed from the information of previous cyber university and distance learning organization and learner's e-portfolio of e-learning environment. From the analysis results of the information of previous cyber university and distance learning organization and learner's e-portfolio, we define that learner's Big Data, Big Data classification standards, and Big Data structures. Personalized learning services and adaptable learning contents can be made and compiled supplied based on learner's Big Data. In order to classify learner's Big Data, we analyze e-portfolio classification standard, general learner's preference information, learning relationship information, university affair information, learning device access history and characteristic information. Lastly we define the characteristics and management methods of learner's Big Data and propose learning cloud system that can deal with learner's Big Data and support smart learning service.

The remainder of this paper is organized as follows. In the previous works, we analyze previous related Big Data and research. The proposed learners' Big Data is defined and classification rules in chapter 3 Learners' Big Data. We introduce the learning cloud for manipulating learners' Big Data for smart learning services and learner support service. Finally, we conclude our research in chapter 4 conclusion.

Previous Works

Big Data could be an important assets that enhances ITC services and provide each user with personal contents and adapted multimedia.

Big Data Policy

USA started '2012 Big Data research and development initiative' and invested into Big Data research and development (Weiss, Zgorski, 2012). Big Data Senior Steering Group consists of the Department of Commerce(National Institute for Standards and Technology, National Oceanic and Atmospheric Administration), Department of Defense(Advanced Research Projects Agency, National Security Agency), Department of Health and Human and Human Services(Agency for Healthcare Research and Quality), and Department of Homeland Security. Big Data Research Development Initiative 2012 has three driving strategies. First strategy is Advance state-of-the-art core technologies needed to collect, store, preserve, manage, analyze, and share huge quantities of data. Harness these technologies to accelerate the pace of discovery in science and engineering, strengthen our national security, and transform teaching and learning; and Expand the workforce needed to develop and use Big Data technologies (Weiss, Zgorski, 2012).

U.K. Cabinet Office and the Department for Business, Innovation & Skills announced the policy for data accessibility and data sharing, open data lists. The Department for Business, Innovation & Skills established Data Strategy Bound for public data open and value creation with data. And the Department for Business, Innovation & Skills provides with advices for data openness and potential value with data, and consistent approach for public data. National Data Strategy manages web site for data accessibility and activation and will provide medical data, tax data, and employment data (<https://data.gov.uk>).

Japan announced ‘Big Data Application Plan’ for Big Data utilization basic policy establishment and vision. Ministry of Internal Affairs and Communications of Japan announced five important goals of ‘Active Japan ICT’ strategy that includes Big Data utilization and usage for society and economy (<http://activeictjapan.com/>). Japan government established Big Data Utilization Civil Committee that discussed Big Data utilization case study, project and funds, and vision. Big Data Utilization Civil Committee established Big Data sharing policy, infrastructure technology development and standardization, manpower training policy, Internet of Things promotion policy, results evaluation standardization.

Korea government proposed four promotion strategy formulation and four goals of Big Data Vision (Shin, Kim, 2013). First promotion strategy formulation constructs cooperative system with all government ministries and civil organization. Korea National Information Strategy Committee constructs Big Data expert committee, and coordinates and deliberates on a policy related with Big Data. Especially social data analysis for technology competitiveness, basic infrastructure technology for Big Data processing and storage are decided as important main research subjects.

Big Data Related Technology

Big Data technology consists of Big Data collection, Big Data share, Big Data storage, Big Data process, Big Data analysis, and Big Data visualization (Shin, Kim, Lee, Oh, 2012). Table 1 is Big Data technology.

Table 1: Big Data Technology Classification

Technology Classification	Description	Technology
Big Data collection	data search and collection technology from distributed data source in inner-organization or outer organization and refined data search/collection/convert technology	<ul style="list-style-type: none"> ▪ ETL ▪ crawling engine ▪ log collector ▪ sensing ▪ RSS, Open API
Big Data share	Data sharing technology between heterogeneous systems	<ul style="list-style-type: none"> ▪ multi pendent data sharing ▪ cooperative filtering
Big Data storage	Real-time access technology for processed data and business decision making technology with analyzed data	<ul style="list-style-type: none"> ▪ parallel DBMS ▪ Hadoop ▪ NoSQL
Big Data process	Real-time Big Data transactions processing technology	<ul style="list-style-type: none"> ▪ real-time processing ▪ distributed parallel processing ▪ in-memory processing ▪ in-database processing
Big Data analysis	Trend or meaningful value extraction technology from Big data or new fact extraction technology for business fields	<ul style="list-style-type: none"> ▪ statistically analysis ▪ data mining ▪ text mining ▪ optimization ▪ social networks analysis
Big Data visualization	Visualization technology of Big Data analysis results for Big Data analysis results understanding and reasonable decision making	<ul style="list-style-type: none"> ▪ editing technology ▪ information visualization technology ▪ visualization tools

Learners' Big Data

Smart Learning and Learners' Big Data

Beyond the traditional education paradigm, smart learning makes various and huge learning data, learning information and learning contents and needs various and huge learning environment related data, learning environment related information and learning environment related contents. Smart learning is the combination of “smart” which means it can construct person centered e-Learning service using various information communications service with no limitation of time and place (Chung, Kim, Lee, Jung, 2014).

Smart learning environment is fused with learner's life environment and virtual learning environment. And various and huge learning environment related data, learning environment related information and learning environment related contents can be used as learning resources and mutual learning interaction between learner, learning contents and professor can be used as knowledge for smart learning.

In the traditional education environment, learning activity related data is produced by examination score and grade, homework score and except for examination score and grade and homework score, the other learning activity related data does not recorded and managed. But in smart learning environment, various and huge learning environment related data, learning environment related information and learning environment related contents are defined, recorded and managed as learners' Big data and are used for adaptation and personal learning contents productions.

In order to stimulate a learner's learning competence and progress, personalized learning sequence and learning contents are decided by huge learner's information that can be produced from various fields as like ITC service, informal learning class, SNS activity, normal life activity, and etc.. And smart learning environment can be established from learners' Big Data. Learners' Big Data is useful to instructors and teachers who can get various analyzed information of learners and give various and exact personal feedback to each learners. Instructors and lecturers can decide optimized contents for a learner from the learner's Big Data analysis results. And a learner can make plan for his/her future learning contents type and learning style from his/her Big Data analysis results. Lastly learning contents developers can make adaptation methods and modification methods of smart learning contents from the learner's Big Data analysis results.

In this paper, learner's learning goal, learning preference, technology feasibility, learning competence, learning progress, etc. are considered for learners' Big Data. Learners' Big Data is used for learning contents adaptation and alternative learning sequence searches. Learners' Big Data is basically classified into basic learners' Big Data and analytic learners' Big Data.

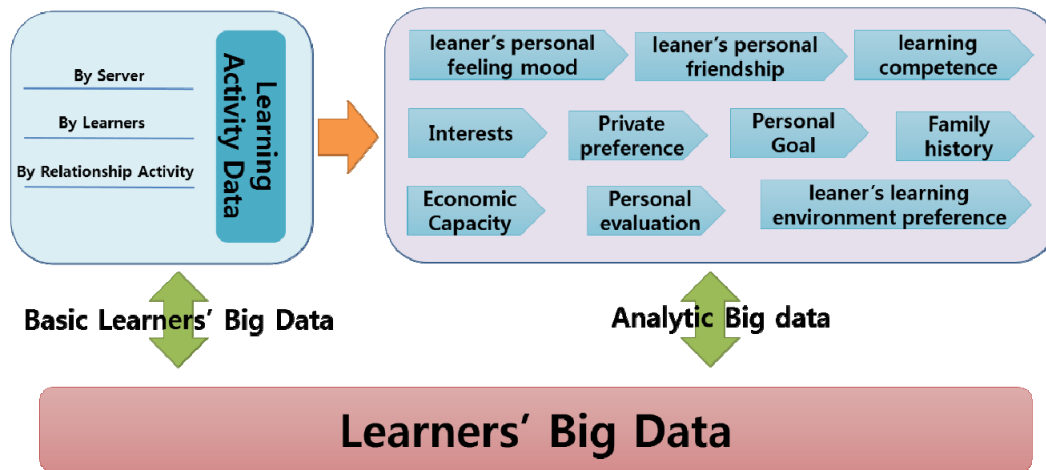


Figure 1: Basic Learners' Big Data and Analytic Learners' Big Data

Basic learners' Big Data is produced by a learner who get the score or grade of subjects, submit homeworks, and the other learning activity results. The score or grade of subjects, submit homeworks, and the other learning activity results are recorded in learners' Big Data database and statically manipulated and analyzed. Analytic learners' Big Data is various and huge data that are collected and analyzed from real life of a learner as like SNS (social networks service) activity results, multimedia contents preferences, owned mobile devices, mobile communication style, and learning history.

Basic learners' Big Data is produced by only a learner. But analytic learners' Big Data is collected and analyzed from various sources that are ITC server, a learner, and relationship. ITC server records a learner's connection time, downloaded application type, mobile devices type, and etc.. The learner produces blog data, e-mail, bulletin board, personal situation, location information, transport information, and etc.. Relationship information means SNS relationship (Twitter friends, Facebook friends, LinkedIn friends, KakaoTalk friends, etc.), the other SNS relationship, chatting contents and twit and etc..

Table 2: Producer of Learning Information

Producer	Items
ITC server	Server connection log : information automatically produced only by server login(connection time, connection device type, connection network type, etc.) Learning activity tracking log : learning contents connection time, learning content preference history and etc.
Learner	Information about blog, café, twitter, LinkedIn managed or owned by learner information about a learner's location, daily routine, social position, etc.
Relationship	Information from SNS relationship (Twitter friends, Facebook friends, LinkedIn friends, KakaoTalk friends, etc.)

Learners' Big Data Definition and Classification

Learners' Big Data is defined as high-volume, high-velocity and high-variety learner's information assets that demand learner's information analysis and manipulation for enhanced insight and decision for personalized learning environments and educational vision. Learners' Big Data is used as building-block for strategy of educational policy establishment and educational system establishment. Especially, analytic results of learners' Big Data is necessary for learner support system for university dropout, learning contents adaptation system and online study group support system.

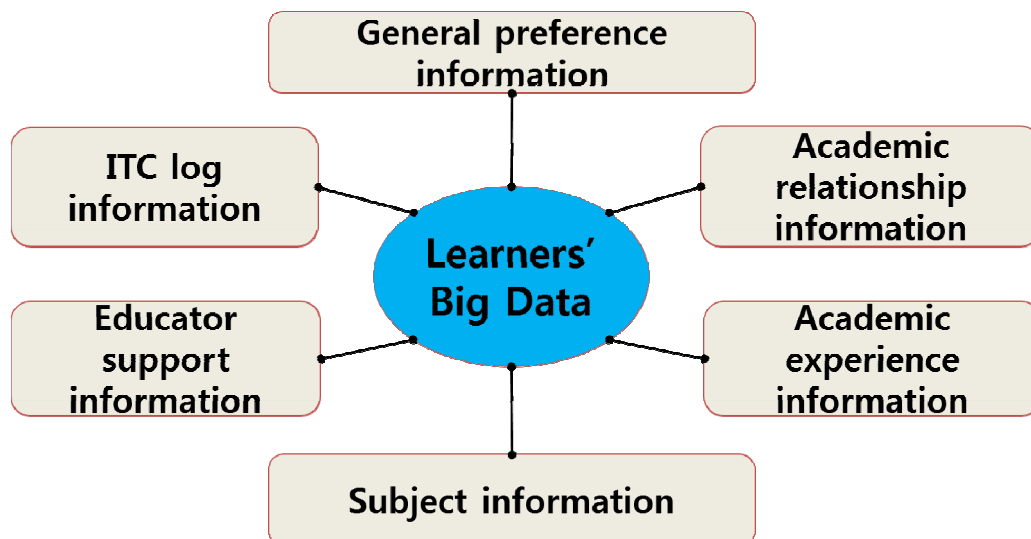


Figure 2: Learners' Big Data Classification

Basic learners' Big Data consists of a learner's personal information as like Learner's gender, age, job title and educational history, and academic affair information. A learner's personal information and academic affair information is classified into general preference information, academic relationship information, subject information, educator support information, learning support information, ITC log information.

According to the above classification standard, learners' Big Data can be classified and manipulated, and used to extract useful and valuable learner support information.

General preference information is used for learner's identification and produced in the daily life. General preference information consists of gender, citizenship, age, job title, educational history, and etc.. Academic relationship information is affiliation information with a university and produced while the period of attendance at school. Academic experience information is learning activity information that includes subject score and grade, and entrance score. Academic experience information is sorted by the time sequence. Subject information is characteristics and information of subject that a learner attends lectures on. Subject information has prerequisite subject and curriculum information. Learning support information consists of lecturers' information, tutors' information and professors' information. Educator support information has educator's name, affiliation, age, gender, citizenship, job title, educational history, reference resources, and etc.. ITC log information consists of blog information, connection frequency per web pages, SNS activity information.

Learners' Big Data classification standard and description is as like table 3.

Table 3: Learners' Big Data Classification Standard

Learners' Big Data Classification Standard	Definition	Main Information
1. General preference information	Ordinary person's individual information and identification of the person	<ul style="list-style-type: none"> gender, nationality, job title, academic background, etc. home address, regional position, daily transport routine, etc. dietary behavior, religion, hot spot, etc.
2. Academic relationship information	Formal information produced as a learner in a university	<ul style="list-style-type: none"> graduate school/undergraduate school, full-time student/part-time student, department, study group, SNS group, etc.
3. Academic experience information	Whole learning activity of school day (from entrance to graduation)	<ul style="list-style-type: none"> entrance examination scores, entrance year, high-school diploma, middle-school diploma, elementary school diploma, etc. enrolment, enrolment number, readmission, readmission year, etc. course registration, number of registered subject, etc. subject score and grade, homework score, etc. scholarship grant, scholarship type, etc. school registration type(preparation for entrance, registration, school absence, disenrollment, graduate, etc.) diploma type, graduate year, etc. subject name, digital library lending information, class type, subject contents type, etc. class type, class credit, subject open department, management department, subject open year, subject open term, etc. examination type, number of examination, etc. lecturer type, lecturer teaching evaluation, lecturer teaching history, textbook information, etc. tutor type, teaching evaluation, tutor teaching history, etc.
4. Learning support information	ICT information for learning	<ul style="list-style-type: none"> connection frequency per year-per month-per date, preferred web site, search keyword, bulletin board access frequency, etc. mobile device type, communication type, location information, etc.

According to the classification standard of basic learners' Big Data, learners' Big Data is classified and analyzed into learning information database by learning cloud. Learning information database is basic information for learning contents adaptation and personalized learning environment.

Analytic learners' Big Data consists of a learner's personal feeling mood, learner's personal friendship, learner's learning environment preference, learning competence and etc.. Analytic learners' Big Data is private and very sensitive to personal security. And huge information processing procedure is needed for analytic learners' Big Data and learning cloud system supplies computing resources to Analytic learners' Big Data process. Analytic learners' Big Data consists of learning environment preference information, learning aptitude information, learning vision and goal, daily life aptitude information, learning potential information, learning achievement motivation, learning interests.

#

Conclusion

As learning contents and learning activities are diversifying, demands and requisite services of learners are increasing. Especially huge and various learning contents have many kinds and type that can be produced from normal daily life and peer learners. Various mobile learning devices has demands for learning contents adaptation service. Each learner wants personalized learning contents for their learning goal and personal vision. For those new trends, learning contents adaptation and personalized learning environment is necessary for smart learning environments. In order to construct smart learning environment, we propose learners' Big Data that can be decision making factors for adapted and personalized learning contents. With propose learners' Big Data, learners can be provided with learners support services and cooperate with other peer learners.

For propose learners' Big Data, basic propose learners' Big Data and analytic propose learners' Big Data are newly defined in this paper. Basic learners' Big Data consists of a learner's personal information as like Learner's gender, age, job title and educational history, and academic affair information. A learner's personal information and academic affair information is classified into general preference information, academic relationship information, academic experience information, subject information, learning support information, ITC log information, Analytic learners' Big Data consists of a learner's personal feeling mood, learner's personal friendship, learner's learning environment preference, learning competence and etc.. With collected basic learners' Big Data and analytic learners' Big Data, learner personalized support service, academic tutoring service and adapted learning contents delivery service are possible. And enhanced distance learning environment can be supported. In near future, we have plan to design learning cloud system with learners' Big Data.

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PRIORITIZING SERVICES AND FACILITIES IN A HIGHER EDUCATION INSTITUTION: IMPORTANCE-SATISFACTION QUADRANT AND GAP ANALYSES

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Abstract

Student satisfaction surveys serve as a useful tool for a higher education institution in measuring its effectiveness, and at the same time providing auditable evidence that students have been given the opportunity to reflect on their learning. This study employs a 2-dimensional i.e. importance-satisfaction survey which consists of 47 items, categorized under 8 dimensions. Items are phrased as positive expectations and students are asked to assess how important it is to them that the institution meets each expectation, using a seven-point Likert scale ranging from not at all important (1) to very important (7). They are then asked to rate their level of satisfaction, using the same scale from very dissatisfied (1) to very satisfied (7). A total of 709 postgraduate students responses were used in this study. The questionnaires were analysed using SPSS and both Quadrant and Gap analyses were used. The results showed that the postgraduate students are generally satisfied with OUM's programmes and services. In terms of the quadrant analysis, Facilitators, Curriculum and Faculty were found to be the strengths dimensions; placed in the HIHS quadrant using the overall importance and satisfaction means as the origin for the matrix. Though the quadrant analysis reveals the strengths and weaknesses of the services provided, it is not explicitly clear as to which specific items present as promotional materials or that requires urgent improvements. This study has combined both the quadrant and the gap analysis to determine the "selling points" and the "critical points" for OUM in light of the services provided to the postgraduate students. The "selling point" items are the HIHS items with the lowest gap scores and they are: MyVLE is easily accessible, University provide learners with online registration every semester and The contents of the courses I am taking are valuable to me. However, OUM's "critical points" are items in the HILS quadrant with the highest gap scores and also HIHS items with relatively large gap scores. The items are highlighted and recommendations are made in the Conclusion and Recommendation section.

Keywords: Importance-satisfaction scores, quadrant analysis, gap analysis, university services, selling points and critical points

Introduction

Quality has become an important subject of discussion among Higher Education Institutions (HEIs), and has been extensively studied in recent years. Just like any other organizations, to be successful and sustainable, HEIs need to perform their role efficiently and effectively. In attracting students HEIs need to find out if students are satisfied with the performance of the institution when compared to their expectations upon their arrival and during their academic years. In this context, it is crucial that HEIs undertake genuine efforts to measure their performance on a regular basis.

According to Rowley (2003) it is indeed important for HEIs to seek student feedback and there are four major justifications for doing so. Firstly, it is to furnish evidence that students have been given the opportunity to comment on services and that such inputs are used to improve the services. Secondly, to encourage students reflection on university learning. Thirdly, to permit universities to benchmark and develop indicators that will allow the identification of the university's reputation in

the marketplace; and fourthly, to permit students to provide their level of satisfaction with their academic experience.

There are many tools that can be used to measure performance of an institution and one of them that will be used in this study is the Importance-Satisfaction Analysis. Martilla and James (1997) first introduced the Importance-Performance Analysis as a method for developing and analysing business strategies. Since its origins, the importance-performance analysis has been applied to different areas and has been a helpful tool in evaluating HEIs.

However, this study employs the Importance-Satisfaction Analysis. The performance term introduced by Martilla & James was replaced by satisfaction, since it considers that satisfaction has become the primary measure of service quality (J.Tonge and S. Moore, 2007; A. Aktas, A. Aksu, and B. Çizel, 2007; K. Matzler, E. Sauerwein, and K. Heischmidt, 2010; F. Silva, and P. O. Fernandes, 2010). According to these authors, satisfaction provides information to analyse the performance of an institution based on results. By comparing the importance of satisfaction with certain attributes, it will allow institutions to identify areas in which to intervene and focus on service performance. The tool helps identify the institution's strengths and weaknesses. After identifying these factors, institutions are able to formulate strategies to enhance those strengths and eliminate weaknesses.

In the Malaysian context, competition among the many HEIs, both public and private is stiff, particularly when there is a strong emphasis on the ranking of universities. While all the Malaysian HEIs are traditional/conventional universities, there are three HEIs that operate in the Open and Distance Learning mode and they include: Open University Malaysia (OUM), Wawasan Open University (WOU) and Asia e-University (AeU). While it is critical for the conventional public and private HEIs to showcase their strengths, it is even more critical for the ODL institutions to do so. The massive working adult population who wishes to continue their studies has a far more limited choice of institution, and especially if they have to pay the tuition fees out of their own pockets, they would definitely want to choose the right institution. Added to that, the educational environment in the Malaysian private education institutions is very dynamic, competitive, and challenging. Since 2010, all higher education institutions in Malaysia are required to take part in the Rating System for Malaysian Higher Education Institutions (SETARA) to further enhance the quality of the education. A total of 25 criteria, including questions on student satisfaction, were captured through 82 indicators. The rating system uses a six-tier category with Tier 6 identified as Outstanding and Tier 1 as weak. The final 16 results indicated that out of 47 universities and university colleges rated, 18 institutions achieved a Tier 5 category, 25 institutions in Tier 4, and 4 in Tier 3. None of the institutions appear in Tier 6 or in Tiers 1 and 2 (University World News - Malaysia, 2009), and OUM has done well by being one of the 18 in Tier 5.

This importance-satisfaction survey has been conducted regularly since 2005 and the last one was administered to students in January 2014. As in similar studies carried out by others, the main objective is to identify OUM's best services which can be used as promotion materials and more importantly the critical factors or items which need to be attended to and acted upon for immediate improvements. If action taken is not immediate, OUM runs the risk of having students switching to another institution which offers better services.

Perhaps the major contribution of this study will be the combined use of quadrant analysis and gap analysis in specifically identifying the "Selling Points" and "Critical Points" for the institution. The gap for each factor/item is calculated by taking the difference between the importance and satisfaction score. The rationale for combining both quadrant and gap analyses is as follows. The items that fall under the high importance-high satisfaction (HIHS) which represent the "strengths" may not necessarily be ideal for promotion purposes, as their gaps may be large. Thus "selling point" items are those that are in the HIHS but with relatively small gaps. For the "critical points", it will include almost all HILS, i.e "weakness" items plus items in the HIHS quadrant but with relatively large gaps. In ensuring a comprehensive review of the status of all services, the items in the "low priority"

quadrant as well as those in the “possible overkill” quadrant will also need to be reviewed. It does not mean that items which are accorded low importance should be ignored; inadequate attention to these items may result in the students switching over if improved products or services are offered by a competitor. For clarity, instead of using the graphical representation of the quadrants, an inventory list is developed. Decisions are made first based on the importance score, followed by its position in the quadrant and then the gap score.

Objective of Study

The objective of this study is to examine the postgraduate students’ satisfaction with the services provided by OUM in the context of how important those services are to them. A quadrant analysis (see Figure 1) was carried out to determine the areas of strengths and weaknesses, besides taking note of the low priority areas and also areas in which OUM need to re-allocate resources to areas of high importance to its students. For the purpose of clarity and total coverage of all the items covered in this study, a quadrant inventory list was developed, instead of using the two-dimensional graph. Cluttering of the items is unavoidable. The gap between the importance and satisfaction score for the dimensions and items were also calculated. Combined analyses using both the quadrant and gap scores is intended to identify items that represent the institution’s “selling point”, to be used in marketing purposes and promotional activities and “critical points”, i.e. urgent areas that requires the institution’s urgent attention and action.

Research Methodology

Research Instrument

A quantitative survey was designed and developed at OUM to elicit students’ importance for services (using a seven point importance scale with 1= not important at all and 7= most important) and their perceived satisfaction with the services also on a seven point scale (1= not at all satisfied and 7= most satisfied). The questionnaire was structured to seek student opinion on eight major dimensions which include: Curriculum, Facilitators, Faculty, Support Services, Learning Centers, Finance, Outreach and Life/Career Plan.

The Sample

The active postgraduate students in the January 2014 semester form the population for this survey. Stratified random sampling technique was used to ensure good representation of students by programmes, year of study and location (learning center). The hard copies of the questionnaires were administered to students in the various learning centers, after their tutorial sessions. The completed questionnaires were collected by the facilitators after the tutorial session. They were then collated and sent by courier to the Center for Student Management where data was entered, cleaned, and analyzed using SPSS. The results presented below are based on 709 postgraduate data out of a total of 1604 usable questionnaires.

The Questionnaire

Part I attempts to collect the demographic data of the learners. This information includes: Gender; Age; Ethnic group; Programme of study; CGPA and Learning Centre.

Part II seeks to collect information on the importance placed by students and their perceived level of satisfaction on each of the 47 items.

Data Analysis

An Importance-Satisfaction Matrix was developed based on four quadrants which are defined as follows (see Figure 1):

- Quadrant 1: High-Importance-Low-Satisfaction (HILS) for items with a mean importance score more than 6.15 and a mean satisfaction score of less than 5.67.
- Quadrant 2: High-Importance-High-Satisfaction (HIHS) for items with a mean importance score more than 6.15 and a mean satisfaction score of greater than 5.67.

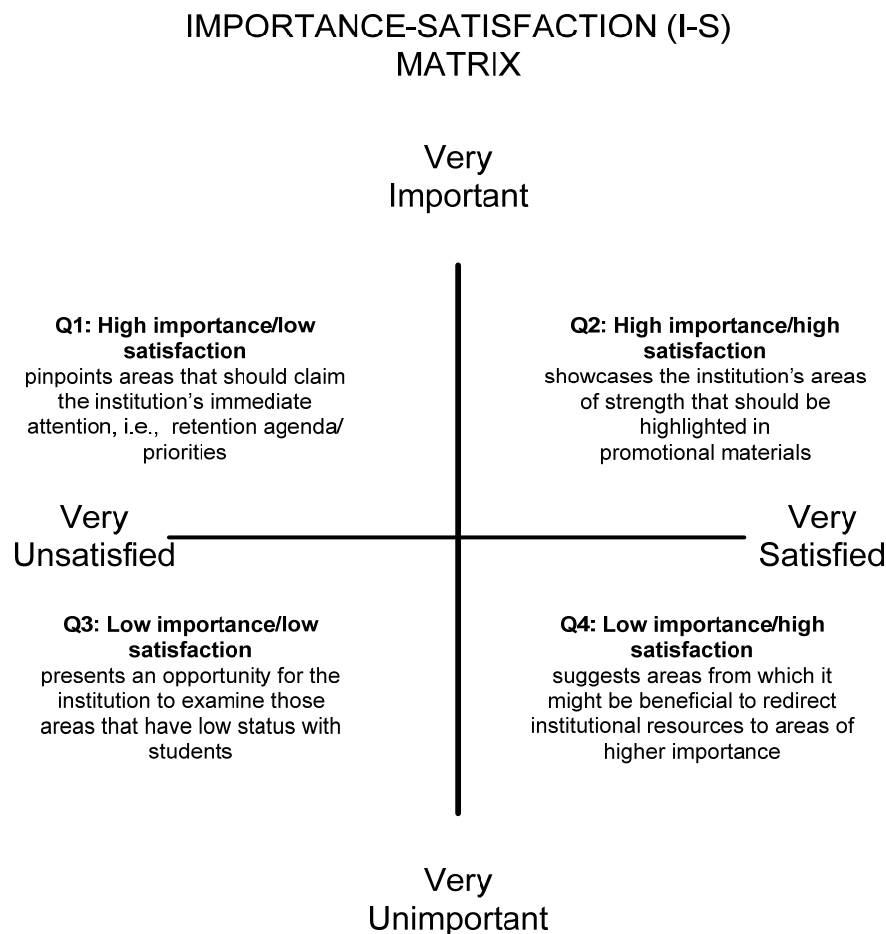


Figure 1

- Quadrant 3: Low-Importance-Low-Satisfaction (LILS) for items with a mean importance score less than 6.15 and a mean satisfaction score of less than 5.67.
 - Quadrant 4: Low-Importance-High-Satisfaction (LIHS) for items with a mean importance score less than 6.15 and a mean satisfaction score of more than 5.67.
- (i) The 47 service-related items were grouped into 8 service dimensions. Each item was then placed in the appropriate quadrants based on the individual importance and satisfaction means with reference to the overall importance (6.15) and overall satisfaction mean (5.67) scores. For example, items with high mean importance scores (above 6.15) but low mean satisfaction scores (less than 5.67) were placed in Quadrant 1 (HILS) while those with high mean importance scores (above 6.15) and high mean satisfaction scores (above 5.67) were placed in Quadrant 2 (HIHS), and so on. This was repeated for all items. The result is a distribution of

items by quadrant which is presented here in the form of an Importance-Satisfaction Inventory (Table 6).

- (ii) The gap score for each item was calculated based on the difference between the importance and the satisfaction score. A list of the gap scores for each item is included in Table 6.
- (iii) A paired t-test was performed on all dimensions to determine if the difference in the gap (importance mean – satisfaction mean) was significant.

Limitations of the Study

The importance-satisfaction survey is a broad, comprehensive overview of students' experiences that provides gross indicators of how well OUM is doing in meeting students' needs. General questions about satisfaction do not provide us with data on how to improve our services and/or what aspect of an area students expressed either satisfaction or dissatisfaction. Further efforts are needed to provide greater depth and meaning to the survey findings. In addition, some questions are written based on the needs of the institution. Finally, inherent to survey research are limitations of imprecision, such as bias associated with the wording and ordering of questions and with sampling error. Given the nature of sampling, certain groups may be slightly over- or under-represented in the sample when compared to the population.

Results and Discussions

Respondents Demography

The total number of respondents for this study was 709. As shown in Table 1, the percentage of female students (69.2%) far exceeds that of the male students (30.8%), and this is consistent with the general ratio of female: male of the general postgraduate student population. This study involved respondents from 15 programmes of which the top three were Master of Education (MED), Masters in Occupational Health and Risk Management (MOSHRM) and Masters in Management (MM), while the rest were each smaller than 6%. The majority of the respondents are in the 26-45 age range (82.6%), and the lowest was from the over 56 years of age group (0.9%). Respondents were from 19 learning centers, and the highest percentage was from Johor, Sarawak and Kuala Lumpur. In terms of the respondents' performance, 47.1% did not answer as they were new students and have not completed their first semester. 18.7% had achieved an unsatisfactory CGPA of 2.0-3.0 (fail); while 34.1% had scored a CGPA of 3.0-4.0.

Table 1: Respondents Demographic Profile

Sex	Frequency	Percent (%)		Age	Frequency	Percent (%)
Male	201	30.8		18 - 25	13	2.1
Female	452	69.2		26 - 35	234	38.0
				36 - 45	275	44.6
				46 - 55	85	13.8
				56 and above	9	1.5
Programmes	Frequency	Percent (%)				
MBA	38	25.3				
MM	16	10.7				
MHRM	9	6.0		Current CGPA	Frequency	Percent (%)
MEd	34	22.7		0.00 - 1.00		
MESd	2	1.3		1.01 - 2.00	3	0.5
MIT	1	.7		2.00 - 3.00	108	18.2
MOSHRM	23	15.3		3.01 - 4.00	202	34.1
MIS-CI	3	2.0		New Learners	279	47.1
MPM	3	2.0				
MN	1	.7				
MITN	1	.7		Learning Center	Frequency	Percent (%)
MIST	5	3.3		Johor Bahru	147	20.8
MIDT	2	1.3		Melaka	7	1.0
DBA	2	1.3		Negeri Sembilan	29	4.1
EdD	10	6.7		Kuala Lumpur	80	11.3
				Petaling Jaya	37	5.2
				Bangi	14	2.0
Race	Frequency	Percent (%)				
Malay	382	53.9		Wangsa Maju	1	.1
Chinese	160	22.6		Shah Alam	67	9.5
Indian	72	10.2		Perak	4	.6
Bidayuh	8	1.1		Greenhill	6	.8
Iban	12	1.7		Manjung	1	.1
Melanau	9	1.3		Penang	16	2.3
Others	3	.4		RECSAM	62	8.8
				Sungai Petani	24	3.4
				Pahang	28	4.0
Age	Frequency	Percent (%)				
18 - 25	13	2.1		Terengganu	42	5.9
26 - 35	234	38.0		Kelantan	48	6.8
36 - 45	275	44.6		Sarawak	94	13.3
46 - 55	85	13.8		Miri	1	.1
56 and above	9	1.5				

This study uses eight dimensions of Curriculum, Facilitators, Faculty, Finance, Learning Center, Life & Career Plan, Outreach and Support Services. The detailed items by dimension are shown in Table 2.

Table 2: The Eight (8) Dimensions and Forty Seven (47) Items

Questi on No.	Dimension	Item
A2	Curriculum	The contents of the courses I am taking are valuable to me
A24		Modules or study guides are of good quality
A30		Course assessment are appropriate
A10		Major requirements of the courses are clear and reasonable
A17		There is a good variety of courses provided in the programme I am taking
A36	Facilitators	Facilitators provide timely and constructive feedback to learners
A39		Facilitators interaction with learners through online forum is helpful
A3		The quality of teaching I receive in my classes is good
A11		Facilitators are knowledgeable in their fields
A18		Facilitators are concerned about my academic progress
A25		Facilitators are easily approachable
A32		Facilitators serve as my academic advisors/counselors
A41		There is active participation in the online forum among facilitators / facilitators and learners
A38	Faculty	Faculties' administrative staff are caring and helpful
A40		Faculties' staff deal with my enquiries and complaints without delay
A42		Faculties' provides timely feedback on learner progress in a course
A44		Faculties' provides academic counseling to learners
A46		Faculties' provides adequate administrative and academic guidelines for learners
A47		Faculties' Programme Coordinators are helpful in providing academic support
A33	Finance	Information about learners' financial accounts is easily available
A4		The fees I have to pay for my studies are reasonable
A12		Staff in the Finance Department are easily accessible via telephone/e-mail
A26		Various fee discounts to learners are available
A19		Policy on payment of fees is flexible
A1	Learning Centre	The Learning Centre staff are caring and helpful
A23		My Learning Centre is conducive for learning
A29		The security of my Learning Centre is well maintained
A6		Information about events happening in my Learning Centre is easily available
A9		The Learning Centre staff are easily accessible via telephone or e-mail
A16		My enquiries and complaints are dealt with by the Learning Centre staff without delay
A35		Parking space in my Learning Centre is adequate
A15	Life & Career Plan	There are adequate services available to help me decide upon a career
A22		Mentors are available to guide my career and life goals
A8		I receive the help I need to apply my academic knowledge gained in OUM to my career
A28	Outreach	University provide learners with online registration every semester
A7		Admission staff provide personalized attention prior to my enrollment to OUM
A14		The library resources are good enough for my needs.
A21		I have been able to access general IT resources when I needed to
A31	Support Services	Electronic Customer Relationship Management (eCRM) is efficient in resolving learners enquiries and complaints
A13		MyVLE is easily accessible
A34		Digital Library is easily accessible
A5		Academic advising/ counseling services adequately meet the needs of learners
A27		Physical library provides adequate reading materials for reference
A37		Welfare Fund is available for needy learners
A43		Orientation for New Learners (Bengkel Kemahiran Belajar) is useful
A45		Learners disciplinary procedures are fair
A20		Learner's Handbook provides helpful information on rules, regulations and policies

Factor Analysis

Dimension

Factor analysis was run to determine the grouping of the 47 items. The importance of the 47 items was run using principal component analysis. The Kaiser-Meyer-Olkin (KOM) was 0.984 which indicates an excellent result (Kaiser, 1970). All dimensions show eigenvalues above 1 and factor loadings greater than 0.4. This shows that the items were valid based on the 8 dimensions covered in this study. In addition, the Cronbach alpha (α) was also determined for each dimension and the result is shown in Table 3. These two results indicate that the items based on the eight dimensions were valid and reliable.

Table 3: Reliability Test Using Cronbach Alpha

Dimensions: Independent Variables	No. of Items	Cronbach Alpha Values	
		Importance	Satisfaction
Learning center (1,6,9,16,23,29,35)	7	0.92	0.87
Curriculum (2,10, 17,24,30)	5	0.91	0.89
Facilitators (3,11,18,25,32,36,39,41)	8	0.94	0.93
Finance (4,12,19,26,33)	5	0.88	0.86
Support Service (5,13,20,27,31,34,37,43,45)	9	0.94	0.92
Faculty (38,40,42,44,46,47)	6	0.96	0.86
Outreach (7,14,21,28)	4	0.88	0.83
Life/career (8,15,22)	3	0.88	0.85
Desired Range of Cronbach Alpha to justify reliability of the dimensions		Above 0.70 (Nunnally, 1978)	

(a) *The Quadrant Analysis (Dimension)*

Using the scale of 1 to 7 for both Importance and Satisfaction, the origin (mid-point) used for the importance-satisfaction matrix is 4:4. Based on this origin, all eight dimension means were found to be in the HIHS quadrant.

However, for the purpose of institutional improvements, it is useful to identify among all the dimensions, which of those that need to be further improved. Using the overall dimension means of 6.15(importance) and 5.67 (satisfaction) each of the dimensions was assigned to a quadrant based on its individual importance-satisfaction means. A dimension with a higher than 6.15 importance score and a higher than 5.67satisfaction score is assigned to a HIHS, (keep up the good work) quadrant, while that with higher importance (>6.15) and lower satisfaction (<5.67) score is assigned to the HILS, (concentrate here) quadrant. Based on the same procedure, the distribution of all dimensions, by quadrants are as shown in Table 4.

The postgraduate students' feedback indicated that the dimensions such as Tutor, Curriculum and Faculty were placed in the HIHS quadrant, these are the strengths of OUM. The rest of the dimensions are in the LILS quadrant, they are the "low priority" areas except for Outreach which is in the LIHS quadrant (possible overkill). All dimensions in the LILS and LIHS quadrants present an opportunity for OUM to review and re-allocate resources to the high importance dimensions. (Table 4)

(b) **Gap Scores (Dimension)**

The gap score for each dimension is calculated based on the formula: $\text{Gap} = \text{Importance} - \text{Satisfaction}$ and its classifications are as follows:

- 1 or more: not meeting expectation;
- 0 to less than 1: meet expectation;
 - 0 -0.49: satisfactorily meeting expectation, and
 - 0.50 – 0.99: almost meeting expectation
- less than 0: exceeding expectation

Based on the above formula, the gap score for each dimension was calculated and the results are shown in Table 4. A paired t-test was carried out and the results indicated that the gap scores for each dimension is significant at the 5% confidence level. As shown in Table 4, the gap scores range from 0.43 to 0.56, a very small difference. Based on the classification, the services provided by OUM to its postgraduate students (by dimensions) meet students' expectations. However, within the eight dimensions itself, and based on the gap scores, Faculty and Learning Centres are the two dimensions that call for urgent attention.

Table 4: The Importance-Satisfaction Inventory: Mean Importance-Satisfaction, Quadrant and Gap Scores (Postgraduate) - Dimensions

Dimension	Mean Imp	Mean Sat	Gap	Quadrant
Facilitators	6.22	5.74	0.48*	HIHS
Curriculum	6.20	5.77	0.43*	HIHS
Faculty	6.18	5.68	0.50*	HIHS
Learning Center	6.14	5.58	0.56*	LILS
Outreach	6.13	5.68	0.45*	LIHS
Support service	6.11	5.62	0.49*	LILS
Finance	6.09	5.61	0.48*	LILS
Career	6.09	5.61	0.48*	LILS
Overall Average	6.15	5.67	0.48	

(c) **Combined Quadrant and Gap Analyses (Dimension)**

The quadrant specifies the “strengths” and “weakness” dimensions. However, there may be cases where the gap score for the strength dimensions are large, thus requiring further improvements. In this study, Faculty is an example. Learning center is accorded the highest gap, however, in terms of importance, it is slightly lower than that for Faculty. Between the two dimensions of Faculty and Learning Center, OUM should give higher priority to Faculty in its improvement plans as it is higher in importance compared to Learning Center. However, it is important to take note that, even though Learning Center is low priority at present, inadequate attention to it may result in the postgraduate students switching over if improved product or service is offered by a competitor.

Items

Normality Test

Normality Assessment is conducted using the Skewness test for every individual item. Normality of items should range between +2 and -2 as recommended by Weinberg & Abramowitz (2002, pg. 278). All items were found normal in the analysis because the skewness is > 2.00 .

Table 6 shows the importance and satisfaction means of all the 47 items. The importance scores range from 6.00 to 6.37, with an overall mean score of 6.15, implying that to OUM postgraduate students, the services provided are important to very important. In terms of satisfaction, the scores for all the items range from 5.08 to 6.08, with an overall mean score of 5.67. This indicates that the postgraduate students are quite satisfied to satisfied with the services provided.

The top five items with highest importance and satisfaction are as follows:

Table 5: Top Five Highest Importance and Highest Satisfaction Items

No.	Five Highest Importance Items	Five Highest Satisfaction Items
1	MyVLE is easily accessible	MyVLE is easily accessible
2	Facilitators are knowledgeable in their fields	University provide learners with online registration every semester
3	Facilitators are easily approachable	The contents of the courses I am taking are valuable to me
4	Modules or study guides are of good quality	Facilitators are easily approachable
5	The contents of the courses I am taking are valuable to me	Facilitators are knowledgeable in their fields

(a) *The Quadrant Analysis (Items)*

Just as in the dimensions, each of the items are placed in the quadrants based on its importance and satisfaction mean values, using the overall means of 6.15 (importance) and 55.67 (satisfaction) as the reference points. The distribution is as shown in Table 4.

Table 6: The Importance-Satisfaction Inventory: Mean Importance-Satisfaction, Quadrant and Gap Scores (Postgraduate) - Items

Item No.	Items	Mean Importance	Mean Satisfaction	Gap	Quadrant
13)	MyVLE is easily accessible	6.37	6.08	0.29	HIHS
11)	Facilitators are knowledgeable in their fields	6.30	5.89	0.42	HIHS
25)	Facilitators are easily approachable	6.29	5.90	0.40	HIHS
24)	Modules or study guides are of good quality	6.29	5.86	0.43	HIHS
2)	The contents of the courses I am taking are valuable to me	6.29	5.92	0.37	HIHS
28)	University provide learners with online registration every semester	6.28	5.98	0.29	HIHS
23)	My Learning Centre is conducive for learning	6.27	5.79	0.48	HIHS
3)	The quality of teaching I receive in my classes is good	6.26	5.78	0.48	HIHS
36)	Facilitators / Tutors provide timely and constructive feedback to learners	6.26	5.70	0.56	HIHS
32)	Facilitators / Tutors serve as my academic advisors/counselors	6.25	5.74	0.52	HIHS
34)	Digital Library is easily accessible	6.25	5.68	0.56	HIHS
18)	Facilitators / Tutors are concerned about my academic progress	6.23	5.80	0.43	HIHS
38)	Faculties' administrative staff are caring and helpful	6.22	5.75	0.47	HIHS
1)	The Learning Centre staff are caring and helpful	6.21	5.78	0.43	HIHS
29)	The security of my Learning Centre is well maintained	6.20	5.72	0.49	HIHS
40)	Faculties' staff deal with my enquiries and complaints without delay	6.20	5.63	0.57	HILS
30)	Course assessment are appropriate	6.20	5.71	0.49	HIHS
47)	Faculties' Programme Coordinators are helpful in providing academic support	6.19	5.70	0.49	HIHS
39)	Facilitators / Tutors interaction with learners through online forum is helpful	6.18	5.66	0.53	HILS
10)	Major requirements of the courses are clear and reasonable	6.18	5.73	0.44	HIHS
9)	The Learning Centre staff are easily accessible via telephone or e-mail	6.16	5.65	0.51	HILS
33)	Information about learners' financial accounts is easily available	6.16	5.72	0.44	HIHS
46)	Faculties' provides adequate administrative and academic guidelines for learners	6.15	5.71	0.45	HIHS
35)	Parking space in my Learning Centre is adequate	6.14	5.08	1.07	LILS
42)	Faculties' provides timely feedback on learner progress in a course	6.13	5.65	0.48	LILS
8)	I receive the help I need to apply my academic knowledge gained in OUM to my career	6.13	5.70	0.43	LIHS
19)	Policy on payment of fees is flexible	6.13	5.72	0.41	LIHS
20)	Learner's Handbook provides helpful information on rules, regulations and policies	6.12	5.68	0.44	LIHS
21)	I have been able to access general IT resources when I needed to	6.12	5.64	0.48	LILS
14)	The library resources are good enough for my needs.	6.12	5.59	0.53	LILS
45)	Learners disciplinary procedures are fair	6.11	5.71	0.40	LIHS
31)	Electronic Customer Relationship Management (eCRM) is efficient in resolving learners enquiries and complaints	6.10	5.59	0.51	LILS
26)	Various fee discounts to learners are available	6.10	5.51	0.59	LILS
22)	Mentors are available to guide my career and life goals	6.10	5.60	0.50	LILS

17)	There is a good variety of courses provided in the programme I am taking	6.09	5.69	0.39	LIHS
4)	The fees I have to pay for my studies are reasonable	6.08	5.63	0.45	LILS
27)	Physical library provides adequate reading materials for reference	6.08	5.45	0.63	LILS
16)	My enquiries and complaints are dealt with by the Learning Centre staff without delay	6.07	5.57	0.50	LILS
41)	There is active participation in the online forum among facilitators / tutors and learners	6.05	5.51	0.54	LILS
15)	There are adequate services available to help me decide upon a career	6.04	5.52	0.51	LILS
43)	Orientation for New Learners (Bengkel Kemahiran Belajar) is useful	6.03	5.52	0.51	LILS
6)	Information about events happening in my Learning Centre is easily available	6.03	5.57	0.46	LILS
37)	Welfare Fund is available for needy learners	6.03	5.46	0.57	LILS
44)	Faculties' provides academic counseling to learners	6.02	5.61	0.41	LILS
7)	Admission staff provide personalized attention prior to my enrollment to OUM	6.02	5.52	0.50	LILS
12)	Staff in the Finance Department are easily accessible via telephone/e-mail	6.02	5.55	0.47	LILS
5)	Academic advising/ counseling services adequately meet the needs of learners	6.00	5.50	0.50	LILS
OVERALL		6.15	5.67	0.48	

The distribution of items by quadrants is summarized in the form of percentage as shown in Table 5. It is heartening to note that 20 out of the 47 items (42.6%) are in the HIHS quadrant; these are the items that showcase the institutions strength. Only three items (6.4%) represent the weakness areas, i.e. pinpoints areas that call for the institution's immediate action. The rest (51.0%) are items of relatively low importance, some of which need to be attended to for further improvement.

Table 7: Distribution of Items (%) by Quadrants (Postgraduate)

	HIHS	HILS	LIHS	LILS
Total Items = 47	20	3	5	19
Percentage	42.6	6.4	10.6	40.4

(b) *The Gap Analysis (Items)*

The gap scores for each item is as shown in Table 6. The scores range from 0.29 to 1.07. There are 28 items with gap scores of less than 0.49, 18 items with gap scores greater than 0.50 and one item with a gap score of greater than 1.0. The item with the highest gap score was "Parking space in my Learning Centre is adequate". Among the 28 items with low gap scores (<0.5), 17 are HIHS (strength) items and 11 are LILS (low priority) areas. On the other hand, within the items with high gap scores (0.5 – 0.63), there were 13 LILS items, 3 HIHS and 3 HILS items. Focus will be directed towards the latter 3HIHS and 3 HILS items.

(c) *Combined Quadrant and Gap Analyses*

In order to ascertain which of these strengths items could be realistically used for marketing purposes, the quadrant analysis was combined with the gap scores. Items in the HIHS quadrant but with very low gaps are the ones that should be used as OUM's "selling points". With reference to Table 6, the selling point items are:

- *MyVLE is easily accessible*
- *University provide learners with online registration every semester*
- *The contents of the courses I am taking are valuable to me*

However, the following two items in this category are cause for concern as their gap scores are greater than 0.50:

- *Facilitators provide timely and constructive feedback to learners*
- *Digital Library is easily accessible*

Still keeping to the high importance items, let us now have a closer look at the weaknesses; the HILS items. There are only 3 items, and obviously the gap scores are greater than 0.50. These are the “critical point” items for OUM and thus demand urgent attention and action. The critical points items are:

- *Faculties' staff deal with my enquiries and complaints without delay*
- *Facilitators interaction with learners through online forum is helpful*
- *The Learning Centre staff are easily accessible via telephone or e-mail*

There are however items that are accorded low importance but with gap score greater than 0.50. The items are:

- *Physical library provides adequate reading materials for reference*
- *The library resources are good enough for my needs.*
- *There is active participation in the online forum among facilitators and learners*
- *Welfare Fund is available for needy learners*

It is quite surprising to note that the first two items related to library resources and online forum as being considered of low importance to the postgraduate students. In as far as the institution is concerned these two items were presumed to be of high importance to its students. This observation in itself presents an opportunity for further research. From the grouses that we received, it appears that the postgraduate students are not in favour of using the online forum; they prefer the face-to-face meetings. They also prefer to use whatsapp as their communication channel as it is quick and easy. In as far as the Digital Library is concerned, students are not happy in using the e-books even though the relevant books have been highly recommended by the various faculties. More reading materials for the postgraduate students need to be made available as the existing ones appear to be inadequate. On the welfare fund, despite of it being accorded low importance, there may be some who are in need of financial assistance, and failing to get it may have caused dissatisfaction, thus explaining the big gap score. In summary, all items in the LILS quadrant with high gap scores (0.50 – 0.63) still require the institution's attention as students can move out to another institution if these items are not improved.

It is noteworthy that “Parking space in my Learning Centre is adequate” was accorded the highest gap. Though it is of low importance in the context of all the 47 items covered in this study, OUM needs to take some bold initiative to resolve this perennial problem. It is a critical issue to students; this item has emerged as the highest gap item in previous studies.

With regards to all the other items which are accorded low importance and having gap scores of between 0.40 to 0.63 and which are not listed above, improvements are still needed, otherwise inadequate attention may result in the students switching over if improved product or service is offered by a competitor. Another possibility is for OUM to re-structure, review and re-assess with a view to re-allocating resources to items which are considered highly important to the postgraduate students.

Conclusion & Recommendation

Overall, OUM has done well in providing the important services to its postgraduate students and at a high satisfaction level. This result is similar to those found in the previous surveys conducted prior to 2014. Since this survey is crucial and need to be administered on a regular basis, it is recommended that OUM implements a system-wide student satisfaction survey as this will allow the institution to have a common database to evaluate experiences at different times. In addition, it will also enable similar surveys to be conducted at different institutions, through research collaborations. In this context, OUM has already established institutional research collaboration with four ASEAN Open and Distance Learning (ODL) institutions known as the OU5, in identifying areas of strengths and challenges while allowing institutions to learn from each other. Another advantage of using a system-wide student satisfaction survey is that it allows institutions to track goals, values, and changing perspectives related to student performance. It is also worth to consider integrating this system with data from the registrar's office, as this will provide direct and valuable inputs to the institution.

OUM takes pride in the following areas: (i) The e-learning platform, known as myVLE, has undergone several upgrading (based on student feedback) and students and facilitators alike find it very useful for both study and administrative purposes. Through this platform students are able to register online with just at a click of a button. They can also check on their financial status, grades, and many others, anytime and anywhere. (ii) The new programme development process takes into account the demands of the potential students through a market survey. Relevant industry personnel form part of the programme development team, and their inputs have contributed to the relevance of the contents of the courses. (iii) The facilitators are mainly from the public and private HEIs and a majority of them are Master and Ph.D degree holders in the relevant fields. Once appointed they are given proper training in ODL techniques of teaching. The regular tracking and monitoring of facilitators in their seminar classes have contributed to the quality of teaching, which have satisfy many of the postgraduate students. (iv) Some of the postgraduate programmes use modules instead of textbooks and not only it is important but students are also satisfied with the modules.

Some of the critical issues that need to be addressed include the following: (i) Facilitator interaction with learners through online forum: students' learning and their performance is very much influenced by the performance of their face-to-face and e-facilitators. Active participation is crucial for ODL students as this replaces the full face-to-face interactions. The Institute of Teaching and Learning Advancement (ITLA) conducts facilitator monitoring every semester, and its e-Learning Unit tracks the activities of the online facilitators. Successful and engaging online interaction requires parties, students and facilitators to be active. Active facilitators may become less active if his/her students are not actively participating in the discussions and vice versa. One suggestion is to formally recognize the contributions of good facilitators; and this may go a long way in motivating other facilitators to perform well in their facilitation. (iii) It is of utmost importance to ensure that faculties address all students' complaints in an effective and efficient manner. To the postgraduate students in particular, time is critical. They will not tolerate staff who delay or do not attend to their complaints and enquiries immediately. At its worst, students will be furious when their complaints are being passed around from one person to another or from one unit to another, but not being resolved. There should be a dedicated staff at each faculty to handle all enquires and complaints that are directed to the faculties and also learning centers. (iii) All staff who are serving students at the learning centers ought to be accessible to students at all times, either face-to-face or online. It is important for learning center staff to be contactable via telephone or email, especially when the seminars and other activities are all held in the learning centers. Students would call in to find out some last minute changes to seminar schedules, etc. And they expect staff to be there to attend to their enquiries. After all, a learning center serves as a focal point for students and facilitators; it serves as the most convenient place for students to highlight their urgent issues. Early resolution to their issues will go a long way in giving them the confidence and comfort in going through their studies. All staff should adhere to the principles of quality customer service whether they are the front-line contact staff involved in teaching and learning or non-contact staff in management of administration.

All staff should be fully aware that if students' needs are positively addressed by the institution, they are more likely to persist and be successful in achieving their educational goals and ultimately will become the institutions' best ambassadors.

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THE EXPLORATION AND PRACTICE OF THE INTRODUCTION OF CREDIT BANK IN THE OPEN EDUCATION

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Abstract

Credit bank is a kind of new open learning system, it breaks through the limit of traditional education by using functions and characteristics of the banks. It promotes different types of learning communication and convergence to meet the learning needs of diversified learners through the recognition of credit bank. At present time, the national and local Open Universities are establishing the system of the learning achievement authentication, established the credit bank system. The exploration and practice of the introduction of credit banking system in open education has become a new research and new practice of distance open learning.

Key words: *Open University, Credit Bank, Exploration and Practice*

1. The Connotation and Characteristics of Credit Bank

School Credit Bank is an open and new educational management system when the thinking of lifelong learning has developed into a certain degree. The Credit Bank is a learning system with functions of credit certification, accumulation, and exchange by imitating and borrowing certain features of bank, to create a personal achievement profile of lifelong learning, and certificates all kinds of learning outcomes with credit bank.

Credit Bank has the following characteristics:

- 1.1. Openness.** The Enrollment mechanism, credit transfer mechanisms, credit accumulation mechanism, learning outcomes evaluation mechanism of Credit Bank all embodies the characteristics of flexible learning system. It implements lifelong education for all members of the society.
- 1.2. Flexibility.** When selecting relevant courses, learners are not restricted to institutions and time, they can select the institutions, courses, time, teachers and means of teaching, and choose programs and majors by their work, career plan and interests. The credits can be installed.
- 1.3. Universality.** All learners who are willing to learn can participate in the institutes which are authorized by Credit Bank. There are no entrance requirements and no restrictions to learning time and space. Learners can deposits credits into Credit Bank and exchange it into certificates in accordance with regulation if need.
- 1.4. Service.** Credit Bank is equipped with a high-quality curriculum resources platform, as well as organizational characteristics and advantages opening up to all members of the society. It is able to provide high-quality educational service to meet diversified learning needs of everyone.
- 1.5. Humanism.** Credit Bank embodies the educational thought of humanism on teaching management and teaching arrangement, emphasizes learner-centered education and focuses on cultivate the awareness and ability of autonomous learning, self-motivation, self-improvement.

2. The Inevitability of the Open University of China to Introduce Credit Bank System

The construction of Open University is an important part of China's national educational reform during the 12th Five-Year Plan. In 2012, provincial Radio and Television Universities were upgraded into Open Universities and have set off a rush to declare the Open University. The Ministry of Education in accordance with stringent reporting conditions after expert appraisal, has agreed Central, Beijing, Shanghai, Yunnan, Jiangsu, Guangdong and other 6 Radio and TV Universities renamed as Open University. After the establishment of the Open Universities, they made a lot of useful exploration and practice on the construction of "Credit Bank". This combination of Chinese Open University and the Credit Bank system has an inevitability important relationship.

First, the Open University and Credit Bank share the same social value. The educational philosophy of Open University is "open education, lifelong service," to server lifelong learning and lifelong education is the social value Open University pursuits. Through the integration of various educational resources at all levels, Open University provides service for lifelong learning for all members of society. To carry academic and non-academic education in one school system, whose distance open education is public education, which is in accordance with China's "Long-term Education Reform and Development Plan" (2010-2020), putting forward "to build lifelong learning 'overpass' to promote education at all levels longitudinal convergence, horizontal communication, providing multiple choices to meet a variety of individual learning and development needs." The Purpose of constructing Credit Bank is to let all members of society to storage their learning outcomes into lifelong learning accounts, and to achieve mutual recognition of different types of learning outcomes and convergence, it can be transformed into diploma or certificate after the accumulation of credit. Credit Bank is the essence of lifelong learning core "overpass" in. Without Credit Bank, there is nearly impossible for lifelong learning to achieve mutual recognition of learning outcomes and credit accumulation and transformation. Thus lifelong education services naturally become the social value of Credit Banks.

Secondly, the construction of Credit Bank is an important and innovative training model of the Open University. In the approval letter of Chinese Ministry of Education to establish the Open University, "to actively promote 'Credit Bank' construction, through the establishment of mutual recognition of learning outcomes and the accumulation of credits, the transformation system, and to explore the structures of lifelong learning 'overpass'", is the mutual tasks and missions of six Open Universities. The construction of Credit Bank has become an indispensable element of open university. When the Ministry of Education assesses the reform results of Open University, The building of Credit Bank must be an inevitable indicator. Deepen reform of Open University school system, it must continually innovative its training model, and introduce Credit Bank system, to form new models and new mechanisms of mutual recognition of credits, credits storage, achievements accumulation and credits transformation, and to promote all forms of education at all levels longitudinal convergence, horizontal communication, providing multiple choices to meet the individual development needs, which is also an important training model innovation.

Again, the construction of Credit Banks can extend the survival and development space for the Open University. The Open University advocates a learning system of "easy entry, strict graduation" which is more open and flexible than Radio and Television University in educational philosophy and methods. But as for academic education, the entrance requirements still exist. To apply for junior college must have a national education series high school level certificate, and to apply for undergraduate college must have a national education series junior college level certificate. And the school system is flexible yet to achieve full credit system. There is a time requirement for the learners to complete their studies, which is to pass the examination for all courses in eight years, learners can not graduate even if only one course yet to pass, and the credits accumulated before will be voided. While Credit Bank runs not like that. The account of it with a function of record and accumulation, learner's credits obtained continuously or intermittently during the years all can be accumulated. Credit Bank accepts learners of various learning backgrounds and recognizes their prior learning

outcomes. Whenever the credits or learning outcomes were acquired, may change into a standard credit in accordance with certain rules and store in the Credit Bank of lifelong learning accounts. If learners want to exchange certificates or diplomas, they can withdraw the credits with the principal of small deposit for lump withdrawal and exchange it into certificates or diplomas by rules. Study via Credit Bank will be more open and flexible than Open University, so to introduce credit banking system, will greatly expand 's the survival space and development of Open University.

3. The Research and Practice of Introducing Credit Bank for the Open University of China

In China, where the term "Credit Bank," first appeared in a national document is in "Long-term Educational Reform and Development Plan" (2010-2020). Open University of China, Shanghai, Yunnan, Jiangsu, Guangdong and other local open universities have started to explore and practice constructing the credit bank system based on the document. Now, the explore and practice mainly focus in theory research, system construction, platform construction, credit certification and transformation rulemaking and service system construction and other work, and practice at the same level of academic education and mutual recognition of credits, non-degree diplomas and certificates "two-way facility" and other aspects.

Theoretically, Credit Bank is still a new thing in China, there is barely nothing to take example from. Thus, Open University mainly carried out theoretical research by drawing on the existing experience of building Credit Bank all over the world. Such as South Korea's Credit Bank building mode (ACBS), European Credit Transfer and Accumulation System (ECTS), the UK qualifications and credit framework (QCF), Australian Qualifications Framework (AQF), the mutual recognition mechanism of curriculum credits in all sectors of College in the United States. But the theoretical research is still mainly limited to the primary academic research, not yet in line with China's national conditions. In 2012 China Ministry of Education approved the Central Radio and Television University to carry out "national continuing education learning outcomes certification, research and practice on certification, accumulation and transformation system" project, it can be described as the only national "Credit Bank" pilot project. Central Radio and Television University organized the 66 ministries, industries, enterprises, universities and other units involved, to carry out research in basic theory, international comparisons and institutional frameworks, the project has been completed and achieved certain results.

Institution building include the upper laws and regulations and specific Credit Bank management system building. At present, China has not yet formally introduced upper relevant documents, although the Ministry of Education has started research work on lifelong learning laws, and initially proposed draft law. Such as the drafting of the "Several Opinions on Accelerating the Development of Continuing Education," "Guiding Opinions on Promoting the accumulation and transformation of learning outcomes," and other top-level design file, but still solicit the views from the community. The relevant provinces and cities have introduced a number of local regulations, such as Shanghai, Ningbo City, Zhejiang Province, Hebei Province and Fujian provinces have issued a "Lifelong Education Promotion Regulation" in succession, among which, the "Lifelong Education Promotion Ordinance" of Shanghai, Hebei and Ningbo set rules for the accumulation and transformation of lifelong education credit, and for the mutual recognition and convergence of different types of learning outcomes. Pilot Credit Bank Project of the Open Universities have also established similar to corresponding operational management system for Credit Bank Management Committee, and expert committees under the support of local educational department.

As for Credit bank platform construction, China's Open Universities have invested a lot of money and personnel in its research and development. Overall, the credit bank platform generally designed with functions like opening account, certification, storage, exchange. Opening account on the platform can be conducted by the learners themselves applying for lifelong learning accounts, as well as by universities or training institutions in groups which were certified by the Credit Bank. Certification is

mainly determined according to the corresponding credit bank rules, after compared on learner's previous learning outcomes, then transform it into standard credits. Then the credits were stored in the Credit Bank account and started to accumulate. When stored in a certain amount of "installment", learners can withdraw the installment at a time and exchange it into diploma or vocational qualification certificates as need.

Credit certification and transition rules are the core of the construction of the Credit Bank, and also the largest part of Credit Bank building. Credit Bank needs to set up a team of experts and curriculum specialists of different professional groups and to set standards for learning outcome identification, credit transformation, certificate exchange according to the relevant rule of the Ministry of Education. At present Credit Bank Construction in Chinese Open University take different ways in setting certification standards and transformation rules. The Credit Bank of National Open University take a "framework + standard" institutional framework, and develop 10 levels of learning outcome Qualification Framework benchmarks, each corresponding to different learning outcomes of academic and non-academic education, and jointly developed over 1600 standards certification unit with 25 ministries, industries, businesses and education and training institutions, formed more than 40 transformation rules. Shanghai Lifelong Educational Credit Bank under the guidance of Credit Bank signed an agreement between universities and educational institutions to recognize their own learning outcomes and credit transfer standards. And it is available for the 469 vocational training certificates to transform into academic course credits, and certificates 3794 cultural and leisure courses. Yunnan Credit Bank take a method of the headquarter making general rules for credit certification and transformation, while guiding partner institutions to develop appropriate credit certification and transformation rules. Now Yunnan Open University has made 4 undergraduate majors, 29 vocational credits certification rules and credit certification standards of more than 800 courses. 8 Vocational College Union also actively develop relevant majors' certification standards and transformation rules.

The service system of Credit Bank is the certification service network, and the Open University of China basically uses their own Open University system as the frontier network, and gradually extended to the community. National Open University to take itself as the Credit Bank headquarter and establishes learning outcome certification centers in Provincial Radio and Television universities and Open Universities. It has set up 47 learning outcomes certification centers in two batches. Credit Bank of Shanghai Lifelong Education established certification service system at the Open University Campuses, Shanghai local colleges and universities and community, and has built by 21 county branches and 68 outlets consisting of universities citywide Credits Bank service network. Yunnan Credit Bank signed a cooperative agreement with the eight provincial demonstration vocational colleges, and set up a Demonstrative Credit Bank and Union Vocational Colleges of Yunnan Province, which have been established certified service outlets in eight league institutions.

In carrying out theoretical studies, system constructions, platform constructions, certification standard and service system constructions, each Chinese Credit Bank side edge research practice, to create lifelong learning accounts for learners, and certificate, accumulate and transform the corresponding qualified certificates. For example, the National Open University has developed a platform to create lifelong learning accounts for almost 30,000 students and completed more than 3.5 million students' basic information storage. Up to July 2014, the Shanghai Credit Bank of lifelong learning education has created lifelong 46.75 million real-name learning accounts, and has transformed 29,901 learners' academic education credits. Meanwhile, the Shanghai Municipal Education Commission and the Municipal People's Insurance Bureau jointly issued the "Opinions on Carrying out Double-mobility on Educational Courses and Vocational Training Certificates" which explores on the mobility of academic education and vocational training certificates. Credit Bank of Yunnan Open University also actively explores within the university, and has created lifelong learning accounts for 53,000 students, and imported relevant data in the platform. And it has also certified and transformed 367 high cohesion project students' vocational qualifications into academic course credits, and has certified 102 middle vocational education students' academic course credits, and was transferred partly or totally into the Yunnan Open University's vocational course credits. Jiangsu Lifelong Education Credit Bank

has created lifelong learning accounts for 3 million people, and began to certificate and transform between qualifications and course credits.

4. Conclusion

The establishment of "Credit Bank" system, learning outcomes certification system, and the build of lifelong learning "overpass" to promote education at all levels longitudinal convergence, horizontal communication, providing multiple choices to meet the individual needs of a variety of learning and development, is the necessary requirements of China's implementation of lifelong education, improvement of the national quality, building of learning society, and also the inevitable trend of China's higher education reform. At present, the research and exploration of Chinese Provincial Credit Banks will become the experience and lessons for Credit Bank to meet the social needs in the future.

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远程开放学习的新研究与实践

——开放教育引入学分银行的探索与实践

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摘要：学分银行是一种开放的新型学习制度，它通过借鉴或模拟银行的功能和特点，突破了传统教育的限制，通过学分的互认，促进不同类型学习成果的沟通与衔接，满足学习者多样化的学习需求。目前，中国国家和地方开放大学正在兴起试点建立学习成果认证体系，建立学分银行制度。在开放教育引入学分银行制度的探索和实践，已成为了远程开放学习的一种新研究与新实践。

关键词：开放大学 学分银行 探索与实践

一、学分银行的内涵及特点

“学分银行”（school credit bank），是在终身学习思想发展到一定程度时提出的一种开放的新型教育管理制度，通过模拟或者是借鉴银行的某些功能特点，以学分为计量单位，为学习者建立个人终身学习档案，对学习者的各类学习成果进行认证与核算，是一个具有学分认证、积累、兑换等功能的学习制度。

学分银行具有以下特点：

1. 开放性。在入学机制、学分转换机制、学分累积机制、学习成果评价机制等都体现了弹性学习制度的特点，面向全体社会成员公开实施终身教育。

2. 灵活性。学习者在选择相关专业与课程学习时，不受院校和时间的限制，可根据工作、求职、兴趣等来选校、选课、选时、选择教学方式和选择教师，可以选修课程，也可选修专业，学分可以“零存整取”。

3. 全民性。一切有意愿学习的学习者，都可参加学分银行认证学校和机构学习，没有入学门槛，学习时间和空间不受限制，获取学分后存入学分银行，根据需要按规定兑换证书。

4. 服务性。学分银行具备强大的优质课程资源平台，以及为全体社会成员开放服务的组织特性和优势，能为每一个社会成员多样化的学习需求提供优质的教育服务。

5. 人本性。在教学管理和教学安排上都体现了从以人为本的教育思想, 强调以学习者为中心, 重在培养学习者自主学习、自我激励、自我提高的意识和能力。

二、中国开放大学引入学分银行制度的必然性

建设开放大学是中国在十二五期间国家教育体制改革的一项重要内容。2012年各省级广播电视大学为转型升级成为开放大学, 纷纷掀起了申报开放大学的热潮。教育部按照严苛的申报条件组织专家评审后, 先后同意了中央、北京、上海、云南、江苏、广东等6所广播电视大学更名为开放大学。各开放大学成立后, 均在推进“学分银行”建设上进行了许多有益地探索和实践。这与中国开放大学与学分银行制度的结合有其必然性有着重要关系。

首先, 开放大学与学分银行具有相同的社会价值。开放大学的办学理念是“开放办学、服务终身”, 服务终身学习、终身教育是开放大学追求的社会价值。开放大学通过整合各级各类教育资源, 为全体社会成员终身学习提供服务。实行学历教育与非学历教育并举的办学模式, 其开办的远程开放教育是大众化教育, 这与中国《国家中长期教育改革与发展规划纲要》(2010—2020年) 提出的“要搭建终身学习‘立交桥’, 促进各级各类教育纵向衔接、横向沟通, 提供多次选择机会, 满足个人多样化的学习和发展的需要”目标是一致的。建设学分银行其目的是, 让一切社会成员把学习成果存储到终身学习账户, 实现不同类型学习成果的互认和衔接, 积累学分后兑换学历证书或资格证书。学分银行的实质是终身学习“立交桥”的核心。没有学分银行这一平台, 终身学习中要实现学习成果的互认和学分的积累、转换, 几乎没有可能。为终身教育服务自然成为了学分银行的社会价值。

其次, 建设学分银行是开放大学创新人才培养模式的一个重要内容。在中国教育部批准成立开放大学的函中, “积极推进‘学分银行’建设, 通过建立学习成果的互认和学分的积累、转换制度, 探索搭建终身学习‘立交桥’”, 是6所开放大学共有的工作任务和使命。学分银行成为了建设开放大学不可或缺的重要元素。在教育部对开放大学办学和改革情况评估验收时, 学分银行建设必然作为教育部验收标准中的一项重要指标。开放大学深

化办学模式改革，必须不断创新人才培养模式，引入学分银行制度，形成学分互认、学分存储、成果积累、学分转化的人才培养新模式和学习认证新机制，促进各类各级教育纵向衔接、横向沟通，提供多次选择机会，满足个人发展需要，其实也是一项重要的人才培养模式创新。

再次，建设学分银行能拓展开放大学的生存发展空间。开放大学实施宽进严出的学习制度，比广播电视大学在办学理念、办学方式等方面更加开放、灵活。但就学历教育而言，入学门槛依然存在，报读专科需有国民教育系列的高中层次学历，报读本科需有国民教育系列的专科层次学历。在学制上实行的是弹性学制，还没实现完全学分制，对学习者的完成学业时间还有修业年限的要求，学习者8年必须通过所有课程的考核，到期即使一门课程完成不了也不能毕业，学习者之前的学分归零作废。学分银行则不这样，学分银行账户具有记录和累积功能，学习者数年内连续或间断学习所得的各类学分均可累积，学分银行接受拥有各种学习背景的学习者，承认学习者先前的学习成果，不论何时取得的学分或获得的学习成果，均可按照一定的转变规则转化为标准学分，存储在学分银行申请的终身学习账户，学习者想兑换资质证书或者学历证书时，以零存整取的方式把学分提取出来，按照兑换证书的规定进行兑换。学习者通过学分银行学习比开放大学更加开放灵活，开放大学引入学分银行制度，必将大大拓展学校的生存与发展空间。

三、中国开放大学引入学分银行的探索与实践

在中国，“学分银行”一词第一次出现在国家级的文件是《国家中长期教育改革与发展规划纲要》（2010—2020年）。国家开放大学、上海、云南、江苏、广东等地方开放大学依据文件纷纷开始了学分银行制度建设的探索与实践。目前，主要集中在理论研究、制度建设、平台建设、学分认证和转换规则制定及服务体系建设等方面开展工作，并在同层次学历教育学分互认、学历证书和非学历证书“双向融通”等方面进行了实践。

在理论研究方面，由于学分银行在中国还是一个新事物，国内基本没什么可以借鉴的经验。因此，开放大学主要通过借鉴国际

上已有的学分银行建设经验开展理论研究。比如韩国的学分银行建设模式（ACBS）、欧洲的学分转换与累积系统（ECTS）、英国的资格与学分框架（QCF）、澳大利亚的资格框架（AQF）、美国的各阶层高校间的课程与学分互认机制等。但目前理论研究更多还局限于初级的学术研讨，尚未形成符合中国国情的统一的理论体系。2012年中国教育部批准中央广播电视大学开展“国家继续教育考试成果认证、积累与转换制度的研究与实践”项目，可谓是唯一的国家级“学分银行”试点项目。中央广播电视大学组织了66个部委、行业、企业、高校等单位参与，在基本理论、国际比较和制度框架等方面开展研究，该项目现已完成并取得了一定成果。

制度建设包括上层法律法规和具体的学分银行管理制度的制定。目前，中国上层相关文件尚未正式出台，教育部尽管已开始了研究终身学习法的制定工作，并初步提出了法律草案。比如起草了《关于加快发展继续教育的若干意见》、《关于推进学习成果积累与转换工作的指导意见》等顶层设计的文件，但还在向社会各界广泛征求意见。相关省市已出台了一些地方性法规，比如福建省、上海市、河北省和浙江省宁波市先后出台了省市《终身教育促进条例》，其中上海、河北及宁波的《终身教育促进条例》还就终身教育学分积累与转换，不同类型学习成果的互认和衔接做了规定。试点建设学分银行的各开放大学也在当地教育厅的支持下建立了类似学分银行管理委员会、专家委员会等相应的运行管理制度。

学分银行平台建设方面，中国的开放大学都投入了大量的资金和人员研究开发平台。总的来说，学分银行平台一般都设计有开户、认证、存储、兑换、查询几大功能。开户可由学习者自己上平台申请终身学习账户，也可经学分银行认证的高校或培训机构为学员集中开户。认证主要是学分银行根据相应的认定规则，对学习者的先前学习成果进行分析比对后，折算为标准学分的操作。学分认定后存储在学分银行账户里开始累计，存储到一定量“零存整取”出来兑换学习者需要的学历证书或职业资格证书。

学分认证及转换规则是学分银行建设的核心内容，也是学分银行建设工作中最庞大的部分。学分银行需要组建不同专业群的专家团队和课程专家团队。根据国家教育部相关规定制定出学习成果认定、学分转换、证书兑换的标准。在中国目前开展学分银行建设的开放大学中，在制定认证标准和转换规则上各自采用的方式不同。国家开放大学学分银行采取“框架+标准”的制度架构，制定出了10个层级的基准学习成果资格框架，分别对应不同的学历教育学习成果和非学历教育学习成果，与25个部委、行业、企业和教育培训机构共同制定了1600多个认证单元标准，形成40多个转换规则。上海市终身教育学分银行则采用在学分银行的指导下，由各高校及教育机构之间通过签订协议的方式自行制定互认学习成果、学分转换的标准。目前可为469个职业培训证书转换学历课程学分，实现社区教育文化休闲课程认证3794门。云南省学分银行则采用由总部制定一个学分认证、转换总则后，指导合作院校制定相应的学分认证和转换规则，目前云南开放大学已制定了4个本科专业、29个专科专业的学分认证细则和800多门课程的学分认证标准。8所高职联盟院校也在积极制定相关专业的认证标准和转换规则。

服务体系实为学分银行的认证服务网点体系，中国各开放大学基本以自身的开放大学系统为第一网点，逐步向社会延伸。国家开放大学采取以其为学分银行总部，在全国各省级广播电视大学和开放大学成立学习成果认证分中心的做法，分两批在全国各地先后成立了47个学习成果认证分中心。上海市终身教育学分银行则在开放大学分校、上海市各普通高校和社区建立学分银行网

点的做法建立认证服务体系，现已建成由21个区县分部和68个高校网点组成的全市性学分银行服务网络。云南省学分银行通过与8所省级示范高职院校签订联盟合作协议的做法，成立了云南省学分银行高职院校示范联盟，目前已在8所联盟院校成立了认证服务网点。

在开展理论研究、制度建设、平台建设、认证标准制定及服务体系建设的同时，中国的各学分银行边研究边实践，为学习者创建终身学习账户，对相应的资质证书进行了认证及转换、存储学分。比如国家开放大学使用已研发的平台为近3万名学生创建了终身学习账户，完成了350多万在校生的基础信息入库工作。截至2014年7月，上海市终身教育学分银行为46.75万人实名制创建了终身学习账户，为29901名学习者实现了学历教育学分转换。同时，上海市教委与市人保局联合印发了《关于开展学历课程与职业培训证书“双证融通”试点工作的实施意见》，在学历教育与职业培训证书之间的沟通机制开展探索。云南省学分银行在云南开放大学系统内也进行了积极的探索，已为5.3万学生创建了终身学习账户，并在平台导入了相关数据。同时还对其开展的“中高衔接”项目的367名学生的职业资格证书进行了认证并转换为学历课程学分，对102门中职教育的学历课程学分进行了认证，部分或全部转换为云南开放大学的专科课程学分。江苏省终身教育学分银行为3万余人创建了终身学习账户，并开始了资格证书与课程学分之间的认证与转换。

四、结语

建立“学分银行”制度，建立学习成果认证体系，搭建终身学习“立交桥”，促进各级各类教育纵向衔接、横向沟通，提供

多次选择机会，满足个人多样化的学习和发展需求，是中国实施终身教育，提高国民素质，构建学习型社会的必要要求，也是中国高等教育改革的必然趋势。目前，中国几个省市学分银行建设的研究和探索，必将为今后真正建成适应社会需求的学分银行提供中国版的经验和教训。

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SOCIAL PRESENCE IN ONLINE GRADUATE PROGRAM TUTORIALS AT DISTANCE EDUCATION

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Abstract

This study examined the existence of social presence in online tutorials at a graduate program in a distance teaching university in Indonesia. The concept of social presence in this study is part of the framework of the Community of Inquiry from Garrison, Anderson and Archer (2000). Community of Inquiry framework is used as a concept and tools to support the learning experience in online learning through computer mediated communication (CMC). The model of Community of Inquiry assumes that learning occurs within the community through the interaction of three core elements, include: social presence, cognitive presence, and teaching presence. According to Garrison, et al., social presence is defined as the ability of participants to identify with the group or course of study, communicate purposefully in trusting environment and develop personal and affective relationships progressively by way of projecting their individual personality. It creates the academic setting for open communication, sense of belonging to the group and its academic goals. It also produces an environment for learners to express themselves freely and openly. The method of this study used content analysis. Data was collected from transcripts of the discussion activities and interactions between students and tutors in online tutorials of three courses in the graduate program. The transcripts of online tutorial activities were analyzed by using content analysis with a message unit. By using the message unit as the unit of analysis, code makers generally see the message that emerges from the interaction between students and tutors in the initiation, discussion and assignments, to determine the category. The result of the study was that the social presence occurred in the online tutorial of the three courses in the graduate program, even though it was not fully optimal.

Keywords: *Scial presence, online tutorial, graduate program, distance education*

Introduction

Online learning has been utilized extensively to enhance classroom learning as well as to increase access to educational experiences at a distance, largely through synchronous and asynchronous computer-mediated communication applications (Garrison & Archer, 2007). Online learning has characteristics of being flexible, where learners are able to study whenever and wherever they want. Through online learning, learners also could learn with their own speed. Another characteristic of online learning is that the role of instructor would change. The role of instructor is a shift from being the source of knowledge to being a facilitator and collaborator with the learners (Rovai, 2004). Their tasks include “providing feedback to learners and a summary of or specific comments on the discussed issues at the end of class discussions and intervening and promoting students’ participation in the discussion when it becomes stagnant” (Ruey, 2010, p. 708).

Online learning also has disadvantages. Sometimes, learners in an online learning program may experience isolation and alienation from the institution because of their physical separation from instructors and other students (Garrison et al., 2001; Morgan & Tam, 1999; Rovai, 2007). Development of feelings of social presence in online learning can assist, reduce or eliminate these outcomes (Rovai, 2007). This experience could be interpreted that the social presence between instructor and students is important in online learning.

Universitas Terbuka (UT) is a distance teaching university in Indonesia, where students learn independently, in undergraduate and graduate programs. In graduate programs, UT offers two learning modes, namely regular program and fully online program. As a distance teaching university, UT uses multimedia learning materials for its students, with printed materials as the major media,

supplemented by non-printed materials. To assist students in their learning, UT provides learning supports, including face to face tutorial and online tutorial.

For graduate students in the regular program, besides learning independently with printed learning materials, they also take face to face tutorial and online tutorial. Online tutorial is a learning support that is held in 13 weeks in one semester, with a tutor as a facilitator. The activities in the online tutorial are initiations, discussions, and assignments. The material of initiation is from printed learning materials and other relevant sources. Students also need to participate actively in discussion forums and do the assignments. Face to face tutorial is the other form of tutorial that is compulsory for graduate students in the regular program. The face to face tutorials are held in the cities of UT's Regional Offices in all over Indonesia for four times in one semester. It is integrated with online tutorial's assignment activities. Students and tutors discuss the online tutorial's assignments during face to face tutorials.

For graduate students in the fully online programs, they also learn independently. However, unlike their fellow students in the regular programs, the students in the fully online programs do not have face to face tutorial. Without face to face tutorial, students are not able to meet their fellow students and instructors in a study forum. There is no verbal communication among students and between students and instructors. Students who do not used to learn in an online learning environment may find that it is challenging to study in the online environment, especially in the graduate level. Students may feel isolated in their learning. They may miss the atmosphere of togetherness in a class room.

The learning atmosphere in a face to face classroom often is connected to social presence. The learning through computer mediated communication considered very low in terms of social presence when compared to the learning through face to face communication (Gunawardena and Zittle, 1997). Generally, there are fears that social presence may be loss in the teaching and learning process at UT, especially in the fully online programs. Therefore, this study examined the existence of social presence in the three online tutorials of the fully online of Public Administration graduate program at UT.

Literature Review

Social presence in this study refers to one of the elements of Community of Inquiry framework from Garrison, Anderson, and Archer (2000). Community of Inquiry framework is used as a concept and tools to support the learning experience in online learning through computer mediated communication (CMC) (p. 87). Community of inquiry is defined as "a cohesive and interactive community of learners whose purpose is to critically analyze, construct, and confirm worthwhile knowledge" [3], (p. 9). The model of Community of Inquiry assumes that learning occurs within the community through the interaction of three core elements, include: social presence, cognitive presence, and teaching presence. Social presence is originally defined as "the ability of learners to project themselves (i.e. their personal characteristics) socially and emotionally, thereby representing themselves as 'real people' in a community of inquiry" (Garrison, Anderson, & Archer, 2000, p. 94). The definition of social presence then is revised as "the ability of participants to identify with the group or course of study, communicate purposefully in trusting environment and develop personal and affective relationships progressively by way of projecting their individual personality" (Garrison, 2011, p. 34). According to Garrison (2011), too much emphasis on developing interpersonal relationship may harm the academic functioning of the group if the individual bonds are stronger than the identity to the group and its goals.

Research evidence suggested that social presence among members of a learning community increased discourse, facilitated the critical thinking carried on by the community of learners, strengthened the sense of community, promoted learner satisfaction, facilitated collaborative learning, and contributed to the success of the learning experience (Garrison & Anderson, 2003; Gunawardena & Zittle, 1997).

Garrison (2011) categorized social presence into interpersonal communication, open communication and cohesive responses. Interpersonal communication is responsible for setting the academic climate for open and academically purposeful communication. It also creates a climate and sense of belonging to the group and its educational goals (Garrison, 2011). Indicators of interpersonal relationships include affective expression, self-disclosure and using humor (Garrison, 2011). Open communication is referred as producing an environment for learners to express themselves freely and openly. Indicators of open communication include continuing a discussion thread, quoting from others' messages, referring explicitly to others' messages, asking questions, complimenting, expressing appreciation, and expressing agreement (Garrison, 2011). Interpersonal and open communication contributes directly to group cohesion. In a cohesive community, constructing meaning, confirming understanding and completing collaborative activities can be achieved successfully (Garrison, 2011). Indicators of cohesive responses include addressing participants by name, addressing or refers to the group using inclusive pronouns, and salutations (Garrison, 2011).

Garrison (2011) argued that social presence is an essential for collaboration and create critical discourse. However, it does not mean to support engagement for only social purposes. He asserted that social presence in academic context means "creating a climate that support and encourages probing questions, skepticism and the contribution of explanatory ideas" (p. 32). Sense of belonging is required to sustain critical thinking and discourse, and that is not able to develop instantly; it must develop over time.

The role of the teacher is important to establish social presence in an online learning. Garrison (2011) asserted that the teacher should model of appropriate messages and responses. It is an important factor in making students feel welcome and in giving them a sense of belonging. The teachers have to be sensitive and responsive at the beginning of the online activities. They should also ask students to collaborate to establish group identity.

Rovai (2007) provided suggestions for the strategies for instructors to promote social presence. He asserted that instructors need to access the discussion forums every day in order to keep up with the conversations. The instructors should post at least one message per day in group discussion boards to suggest that the postings are being read. Postings can be expressions of appreciation, agreement, support, and encouragement, but Rovai (2007) suggested to avoid being so critical. Furthermore, Rovai (2007) advised instructors to maintain a focused discussion and summarize periodically what has been or needs to be done. He also advised encouraging students' dialogue by asking questions that stimulate in-depth reflective discussions and hold students responsible for their thinking.

Garrison (2011) suggested that the tutors have to be sensitive and give the appropriate messages that make the students feel welcome in the class community. The tutors also need to address the messages with respect, and may ask the students to be involved as co-moderators in the discussion forums. The tutors also need to encourage students to participate actively in the tutorial activities.

The role of students in establishing a social presence in an online tutorial is also essential. In the first week of the online tutorial activities, students are expected to build a community. Rovai (2002) defined community in online environments as:

.... consisting of two components: feelings of connectedness among community members and commonality of learning expectations and goals. ... Classroom community is strong when learners (a) feel connected to each other and to the instructor, (b) manifest the immediate communication behaviors that reduce social and psychological distance between people, (c) share common interests and values, (d) trust and help each other, (e) actively engage in two-way communications, and (f) pursue common learning objectives. (p. 322)

In the online class community, students could express their unique opinions and discuss with other, different perspectives. Equal discussions would promote mutual understanding and common improvement, and simultaneously would be building up friendships among students. This online community also could help students to construct their individual identities, overcome anxiety and isolation resulting from online learning processes. In addition, interpersonal communication could allow students' learning experience to be accepted, encouraged, and supported by other students in the community. Therefore, the sense of belonging, identification, and community cohesion are reinforced, which, in turn, drives all the students in the community to play active roles in the interactions (Wei, 2013).

A sense of community in an online class can be encouraged through emphasizing common purposes (Rovai, 2002). In regard to developing the community, as a first step, the students need to have interpersonal communication by introducing themselves to each other. The introduction activity can create a sense of belonging in the class community for the students and it can build open communication and group cohesion throughout the online tutorial activities. Building a sense of community and sense of belonging within the group is necessary to create a collaborative learning environment. Collaborative learning is one of the instructional principles to be considered when designing online social constructivist pedagogy (Huang, 2002).

Table 1: Categories and Indicators of Social Presence

Category	Indicators	Definition	Example
Interpersonal communication	Affective expression	Conventional expressions of emotion, or unconventional expressions of emotion, including repetitious punctuation, conspicuous capitalization, emoticons	"I just can't stand it when...!!!" "ANYBODY OUT THERE!"
	Self-disclosure	Presents biographies, details of personal life outside of class, or expresses vulnerability	"Where I work, this is what we do . . ." "I just don't understand this question"
	Use of humor	Teasing, cajoling, irony, understatements, sarcasm	"The banana crop in Calgary is looking good this year ;-)"
Open communication	Continuing a thread	Using software features to quote others' entire messages, or cutting and pasting selections of others' messages	Software dependent, e.g., "Subject: Re" or Branch from"
	Quoting from others' messages	Using software features to quote others' entire messages, or cutting and pasting selection of others' messages	"Martha writes:" or text prefaced by less than symbol <

	Referring explicitly to others' messages	Direct references to contents of others' posts	"In your message, you talked about Moore's distinction between..."
	Asking questions	Students ask questions of other students or the moderator	"Anyone else had experience with WebCT?"
	Complimenting, expressing appreciation	Complementing others or contents of others' messages	"I really like your interpretation of the reading"
	Expressing agreement	Expressing agreement with others or content of others' messages	"I was thinking the same thing. You really hit the nail on the head"
Cohesive communication	Vocatives	Addressing or referring to participants by name	"I think John made a good point." "John, what do you think?"
	Addresses or refers to the group using inclusive pronouns	Addresses the group as we, us, our, group	"Our textbook refers to...", "I think we veered off track..."
	Phatics, salutations	Communication that serves a purely social function: greetings, closures	"Hi all," "That's it for now." "We're having the most beautiful weather here"

Source: Adapted from Rourke et al., 1999

Method

This study used content analysis for its method. According to Kanuka and Anderson (1998), content analysis is defined as a research methodology that uses a set of procedures to make valid inferences from the text. The procedures in the content analysis include identifying and interpreting variables, collect a sample of the text, and establish the rule of reliability and validity in determining the categorization of the segment or section of text. The process of selecting a segment or portion of a transcript requires researchers to define the unit of analysis. Rourke, Anderson, Garrison, and Archer (1999) identified five units of analysis that has been used in the study of computer conferencing, namely: proportion unit, sentence units, paragraph units, thematic units, and message unit. This research will use message unit.

Data source of this study is the sample text of the discussion activity and interaction between student and tutor in an online tutorial of three courses of the Public Administration graduate program in the first semester of 2015. The transcripts of online tutorial activities will be analyzed by using a message unit. By using the message unit as the unit of analysis, code makers generally see the message that emerges from the interaction between students and tutors in the initiation, discussion and assignments, to determine the category (Anderson, Rourke, Garrison, & Archer, 2001).

Result and Discussion

From the data analysis using the categories and indicators from Rourke et al (1999), social presence was found in the online tutorial activities of three graduate courses at UT, even though not all categories and indicators were occurred. The researcher has analyzed the activities of the discussions using content analysis with message unit. The result of the analysis disclosed that some of the indicators of social presence occurred many times in the discussion activities in the three courses that were analyzed, while some other indicators did not exist. They could be seen in the Table 2 below.

Table 2: Social Presence Categories Occurred in Online Tutorial of Three Courses of the Fully Online Public Administration Graduate Program at UT

Categories	Indicators	No. of times
Interpersonal communication	Affective expression	0
	Self-disclosure	2
	Use of humor	0
Open communication	Continuing a thread	48
	Quoting from others' messages	0
	Referring explicitly to others' messages	7
	Asking questions	0
	Complimenting, expressing appreciation	23
	Expressing agreement	3
Cohesive communication	Vocatives	9
	Addresses or refers to the group using inclusive pronouns	5
	Phatics, salutations	23

From three courses in the Public Administration graduate program that were analyzed, the researcher found that not all tutors introduced themselves or provided their profiles in the online tutorial. The tutors also did not provide an online forum for students to introduce themselves. The introduction is important for students and tutor to know each other, because in the fully online program, students do not have an opportunity to meet face to face with the tutor and their fellow students. Self-introduction or self-disclosure from tutors and students also could support the creation of online community. Within three courses that were analyzed, students and tutors never express their emotions in the discussion, using affective expression, such as repetitious punctuation, conspicuous capitalization, and emoticons. They also never used humor during the discussion or initiation activities. These findings showed that there was a lack of interpersonal communication in some of the courses in the fully online graduate programs.

Meanwhile, open communication did occur in the discussion forums. Students and tutors responded to other students' postings with continuing a thread. Within the responses, the students and tutors expressed their appreciation and complimentary to the arguments or opinions made by other students. Students also expressed their agreement with other students' opinions. Sometimes, they express them with referring explicitly to others' messages, although these just occurred seven times during all discussions in the three courses. The activities in the online graduate program tutorial showed that the discussion activities in the online tutorials have created an environment for students to express themselves freely and openly.

Some of the role of tutors to promote social presence also did occur in the online tutorial of three courses. The tutors posted greetings, appreciation, support, and comments to encourage students' participation in the discussions. As one of the postings from a tutor:

Wow, the participants [of the discussion] here are active and increasingly academic in understanding the issues.... Your answers are good. [You have added] the theoretical or conceptual aspects in analyzing problems. Okay, please continue and sharpen your analysis (a tutor of fully online graduate program course)

Garrison (2011) stated that interpersonal and open communication contributes directly to group cohesion. In a cohesive community, constructing meaning, confirming understanding and completing collaborative activities can be achieved successfully. In the graduate online tutorial courses at UT, cohesive communication occurred in some extent. The analysis disclosed that most of students and tutors greeted each other in the beginning of their postings. Sometimes students and tutors addressed or referred other participants by name. In addition, a few students also addressed the group as a group, using pronoun we or us.

Despite of the existence of social presence in the online tutorial, the researcher found a lack of interactivity in students' postings. A lot of students in the online tutorial tended to post their contributions without referring to those of their peers. This finding is similar to two separate studies from Henri (1992, 1995), who observed that over two-thirds of learners in online discussion posted 'serial monologues'; they did not respond based on their peers' contributions. McKenzie and Murphy (2000), as well as Pawan, Paulus, Yalcin, and Chang (2003) found the similar results in their research.

Conclusion

Social presence creates an academic atmosphere for open communication, a sense of belonging in the group and the academic goals, also produces an environment for learners to express themselves freely and openly. In the three graduate online tutorial courses at UT, social presence only occurred in some extent.

There were open communication and cohesive communication in some of the discussions of the online tutorial. However, interpersonal communication between students and tutors and among students was limited. Tutors did not form a forum for students to introduce themselves, so students did not have an opportunity to know other students better. In conclusion, the social presence occurred in the three online tutorials of the fully online of Public Administration graduate program at UT, even though it was not fully optimal.

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PRACTICUM EXPERIENCES OF FOUR EARLY CHILDHOOD CARE & EDUCATION LEARNERS AT OPEN UNIVERSITY MALAYSIA (OUM)

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Abstract

This qualitative study investigates the experiences of Bachelor of Early Childhood Education (Hons) or BECHE open distance learners (ODL) Open University Malaysia (OUM) in undertaking their HBEF4606 BECHE Practicum course during their final semester. Once registered for the course learners are provided with a Practicum Guidebook as a reference on step-by-step procedure throughout the practicum period. An e-Tutor is also appointed by the university to assist learners. Learners are requested to look on their own a task or preschool for the practicum. They are allowed to conduct the practicum at their own premises. In-depth semi-structured interviews with open-ended questions were conducted with 4 (four) learners who were randomly picked from the Semester January 2015 HBEF4606 BECHE Practicum course group to gain a broader perspective on the key issues. Findings from this study suggest that all learners are not used to the ODL practicum structure and procedures. At the early stage of the practicum all learners interviewed feel “blurr” and lost. They do not understand most of the requirements of the practicum and few terms used in the guidebook. There was confusion regarding which Practicum Guidebook to follow because there were few versions posted on myVLE. Learners agreed that communication with the administrator at OUM Kuala Lumpur was not encouraging. Feed back and reply often late and sometimes difficult. This situation create panic among learners. In term of expectations, learners expected there will be briefing session or sessions regarding the HBEF4606 BECHE Practicum course which explaining and discussing details about the practicum. Learners also expected the appointed supervisor to provide guidance and assistance to them throughout the practicum period. Interview data also reveal that learners communicate with the rest of the ODL community to do the check and balance especially with those who have practicum experiences (during their Diploma with the public institution) when they were unsure on certain issues regarding the practicum requirement or procedures. In conclusion, the learner views and expectations regarding their practicum and their faculty’s expectations regarding the practicum is a mismatched. The faculty assume that the learners will be able to understand the ODL practicum process and procedures just by refering to the HBEF4606 BECHE Practicum Guidelines while the learner expected that they will be guided by the faculty’s member on how to go about with the practicum throughout the practicum period. Few suggestions on how to improve the implementation of the HBEF4606 BECHE Practicum were also discussed by the learners. In conclusion HBEF4606 BECHE Practicum is said to be important

1. Introduction

It is necessary for learners under-graduating towards a teaching qualification to enrol a programme that consist of practical experience, not just academic. In its related programme, Open University Malaysia (OUM) provides learning theories on child development, pedagogical content knowledge, and system of education. Nonetheless, practicum is still a required efficacy.

Studies revealed that students view their practicum experiences as an essential component in their teaching realm (Sedibe, 2014; Tang, 2003; Ben Peretz, 2001 as cited in Tok and Yilmaz, 2011).

The relevant open distance learning (ODL) mode programmes which are Diploma in Early Childhood (DECE) and Bachelor in Early Childhood (BECHE) offered at OUM under the Faculty of Education and Languages (FEL) incorporate practicum at the final semester of these programmes (either in semester ten or twelve).

Learners generally prefer online delivery due to its flexibility as well as availability of OUM's resources in all geographical areas. In this respect learners are expected to be self-directed and well organised in time management.

The mode of ODL necessitates learners to make their own arrangement during their practicum while relying substantially on e-tutors to guide their experiential learning. Hereby lays challenges to learners such as placement and confusion over student-teacher's role expectation in producing a practicum portfolio. It is apparent that the mode of ODL is dissimilar to the conventional system of learning offered in most higher learning institutions.

On the above premise, the aim of this study is to examine the challenges confronting students of four early childhood care and education (ECCE) during practicum and to recommend means for effective running of the internship/practicum programme. The study will cover three areas; administration process prior to practicum, practicum supervision and learners' expectation.

2. Problem Statement

A successful practicum requires the learners to receive good support especially before and during practicum. Graham (2006) points out that the success of practical experiences is the supervisor/mentor giving support to the learner and the placement where the experience occurs. In an online programme as we know, ODL learners can be located at any distance where internet is accessible; hence ODL learners can be located at a sufficient distance from the main campus. This would make it difficult for supervisors to visit learners due to time and financial constraints. This will create a challenge for practicum placement and supervision. Regardless whether the program is full time or fully online, practicum experiences are essential for learners' integration of skills, theory and critical thinking process into professional practice. It is crucial that learning must takes place in working place and learners must demonstrate their learning in a meaningful context for work readiness. However the ECCE learners in OUM are facing challenges especially in terms of support provided during the practicum period hence this study therefore attempts to answer how far OUM has succeeded in providing support to four ECCE ODL learners during their practical experiences.

2.1.1 Objectives of the Study

Objective of the study is subdivided into general and specific objectives.

2.1.2 General Objectives

The aim of this study is to investigate what kind of support is needed by OUM ODL learners during the DECE and BECHE practicum and how far OUM or particularly FEL has succeeded in providing support to four ECCE ODL learners during their practical experiences.

2.1.3 Specific Objectives

1. To investigate whether sufficient support was provided to OUM ECCE ODL learners in preparation for the teaching practicum.
2. To investigate whether sufficient support was provided to OUM ECCE ODL learners during the teaching practicum.
3. To identify OUM ECCE ODL learners' expectation once they enrolled into this programme and during their teaching practicum.

2.2 Research Questions

1. To what extent the university was able to assist the learners in the preparation for the practicum so that sufficient support were provided by FEL to the learners in the preparation for the teaching practicum?
2. To what extent were the learners assisted by their supervisors during the teaching practicum so that sufficient assistance were provided to the learners throughout their practicum period?
3. What were the expectations of the ECCE ODL learners in term of support to be provided by the university when they enrolled into this programme and during their teaching practicum so that FEL are more prepared with the necessary requirements needed by the ECCE ODL learners in order to go through the teaching practicum successfully?

3.0 Literature Review

3.1 Definition of Teaching Practicum

According to Merriam Webster, n.d., teaching practicum is part of the course of study for teachers that involve learners working in the area of study and using the knowledge and skills that have been learned in a school.

According to Faiver (2004) teaching practicum is an opportunity where teacher candidates can apply theories and concepts learned in programmes coursework as well as observe and participate in diverse educational settings.

For this particular study the teaching practicum refers to the teaching experience given to OUM DECE and BECHE learners after going through nine and twelve semesters accordingly. The practicum portfolio must be produced after the practicum sessions and report will be produced by supervisors during the practicum sessions in order to meet the university requirement to attain a pass in their practicum.

3.2 Blended Learning in OUM

Open University Malaysia (OUM) blended pedagogy consist of three different methods of delivery which is self-managed learning, face to face and e-learning, has managed to assist more than 30,000 learners since OUM open its door to working adults in 2001(Abtar Kaur, 2006) .

Self-managed learning in OUM is made easy with modules written in simple instructional language and content which is focused on achieving specified learning outcomes in each topic (Abtar Kaur, 2006). Face –to –face classes are provided for learners four times in a semester to ensure learners are able to reach higher order thinking in their specific field however this is not made available for learners undergoing practicum. E-learning is another avenue for learners to have access to their tutors 24 hours in a day. OUM also provides other facilities to support learners in their self-learning such as providing access to the digital library and physical library. Face to face learning on the other hand is an actual class that provides students with the opportunity to interact with tutors four times in a semester and to assist them in understanding difficult concepts and discussion on issues. The e-learning provides virtual classroom interaction as an additional support for online learning.

However when it comes to professionals such as teachers and doctors there is an important need to link what is learned theoretically into practicum as children and people's lives are in the hands of these learners. As emphasised by Tackett et al (2001) internship has taken an important role in the training of teachers as it present learners with experience, career-related direction and networking with other learners from other institutions. In order to ensure ODL learners in the university attains this hands on experience, OUM introduced practicum internship programmes at the end of the 9th

semester for DECE learners and the end of the 12th semester for BECHE learners. They are required to complete and pass the internship practicum programme. Most of OUM ODL learners are working adults and are supposed to make their own arrangement to find placements for their practicum experience. Once learners are accepted they are required to make arrangement with the school administrator or principal to attend practicum. All preliminary arrangements such as learner contact and interview, notification of acceptance, practicum duration and site supervisor must be approved prior to the approval of the practicum. Learners should be prepared to make whatever necessary arrangement to complete this requirement.

3.3 Teaching Practice in the ODL Context

In the ODL environment in OUM, DECE learners are expected to participate in the teaching practicum for six weeks and BECHE learners need to attend between six to eight weeks of teaching practicum during the last semester.

During the teaching practicum period the learners are expected to make all preliminary arrangement to acquire a placement that is nearest or convenience to them. The learners are then required to inform the university regarding the placement, starting date and the completion date of the practicum. They are also expected to do the following during the duration of the practicum:

- Find out and compile all school information from the school manager or co-teacher to be placed in the teaching portfolio.
- Observe demonstration lesson and assist co-teachers.
- Write detailed lesson plans and teach lessons using topics and pedagogical strategies agreed upon.
- Observe a student agreed upon by both parties and parents
- Produce a teaching portfolio and an observation report on the student observed together with the co-teacher report and report from OUM representative.

All throughout the practicum, no briefing or tutorials were given to any of the ODL students. All communication occurs online between the e-tutor and the students through the e-forum in the myVLE. Since most of the OUM ECCE ODL learners are also working adults they have to balance between the requirements of their full time job and their new role as an intern. Therefore OUM makes it easier by allowing full time teachers to do their internship in their own schools. However as the number of ECCE learners join OUM it has been observed that many learners are actually novice in the field and has no prior teaching experience. This created a new problem to OUM as these students need to be guided and supported accordingly to ensure they become sufficiently equipped teachers.

3.4 Importance of Practicum Experience

According to Harrison et. al. (2006) since in ODL the delivery is mainly by electronic and printed materials, the learners were not exposed to opportunities to modelling of acting out of ideal exemplary teaching hence the learners teaching is only based on theoretical knowledge from their teaching material. Therefore the mentor or co-teachers plays an important role in helping to develop the learners professional knowledge and teaching skill. Du Plessis (2013); and Barry and King (2007) further stressed that it's the co-teachers that models good teaching and guide learners to plan good lessons, teach and reflect. This will enhance their teaching skill from just knowing about teaching to knowing how to teach. Evers (2004:1) gives a more general picture about practicum where he says, practicum provides a flexible link between the higher education and the school as it focuses on three important learning domains in teacher preparation. The three domains are content knowledge, professional knowledge (what to know about schooling and the people in them) and the skills of teaching.

Eyers (2004) identified desired characteristics of a quality planning and implementation of a quality practicum programme:

1. The institute or university should take a leading role in planning detailed concept so that the practicum will become part of the whole programme and takes the school as an active partnership in the planning programme.
2. The practicum has on campus and in-school component that is closely related.
3. The practicum staff or co-teacher is a professional and is capable to work both across on campus and school setting.
4. The university should locate quality schools which are willing and capable of providing quality places and support for school-based professional experience required by the students.
5. The selected teachers should have the time and commitment to support, mentor and teach students at their different levels.
6. The teachers are reliable to write a clear and reliable report on the learners' performance.

3.4 Challengers Confronting Students on Practicum

Previous research showed learners were always confused on whose role is it to arrange placement for teaching practicum (Gault et al., 2000). Most learners felt that the university should take an active role in determining the practicum placement (Tackett et al., 2001); and Maskooki et al., 1998). Another issue that was brought about was the duration of the practicum. Most learners felt that three months was too short and at least six to nine months were more appropriate (Bukaliya, 2012; and Mihail, 2006). According to Tackett et al. (2001) a short amount of practicum time is not sufficient enough for the learner to become a fully functional employee. On the other hand, learners have also voiced out how they have been taken in as cheap labour (Rothman, 2007). This has also caused discords amongst workers in a variety of ways. Wheeler (2001) emphasised that selecting qualified teachers to supervise learners are in short supply or are too busy to provide the necessary supervision. Bukaliya (2012) on the other hand, warn of supervisors with inferior qualification treat learners as treats to their position. In some studies there were strategies recommended for further improvement such as prolonged duration of internship (Mihail, 2006). Bukaliya (2012) went further by indicating that interns also advocated that there should be government intervention to ensure legislation is passed for interns to be paid. Lastly, Tackett et al. (2001) argued that the role of arranging practicum placement should be the role of the faculty and not the learner.

4.0 Method

This chapter will describe the research design and approach used to conduct this study. The aim of this study is to determine what support is needed by OUM ODL learners during the DECE and BECHE practicum and how far OUM has succeeded in providing support to four ECCE ODL learners during their practical experiences.

This is a qualitative research using data from interviews and e-forum interactions. Open-ended and semi-structured questions were used during the tele-conversation as the learners were staying quite a distance away from the university. The sample is a purposive sample which consists of four ECCE learners of which two learners were Diploma programme learners (DECE) and the other two were Bachelor programme learners (BECHE). The researchers picked the four learners based on the programme they were taking and the area of the centre the learners were registered. This is to enable the researchers to explore if learners from DECE and BECHE in west and east Malaysia were facing similar problems. The researchers also used data triangulation from interaction recorded in the e-forum and interview done with faculty staff to verify and strengthen validation of data collected from the four interviews. This method was used as according to Webb et al., (1966) when a source of data

is combined by two or more independent measurement processes it will reduce uncertainty in the process.

5.0 Presentation And Discussion of Research Findings

The study revealed that there were actually six main areas of concern that was shared by all the four learners that tallied with the e-forum and information gathered from the faculty staff. The five main areas are:

- Confirmation of placement
- Administrative procedures
- Confirmation of assessment
- Confusion of modules
- Lack of supervision and support during practicum
- Communication problem

5.1 Confirmation of Placement

All the four learners felt that they would prefer if the university could provide with a placement for the practicum as they felt they had to go through too many hassle to get the schools' approvals in allowing them to do their teaching practicum. This is clearly seen in Participant 1 (P1) interview in line 1 and 3:

"This year because of my practicum I quit my previous job and join a kindy. And then they make me sign a contract because I want to do my practicum there".

This is further reinforced in Participant 2 (P2) interview from line 17 to line 20 followed by line 72 and 73:

"I change my coursework so its tough for me. At first it was difficult to get a preschool then I decided to go for KEMAS preschool. Ah, but when I did find one I was told I did not need approval from the management, just start my practicum. But later I found out that I need to apply this delayed my practicum."

This opinion was also similar to studies done by Tackett et. al. (2001); and Maskooki et al. (1998) which found that most learners prefer that universities take an active role in determining the practicum placement. There have also been cases where learners attending for teaching practicum is taken in as cheap labour as in the case of the P1 where she was required to sign a contract of one year. This has also been recorded in previous studies such as in research done by Rothman (2007); and Cannon and Arnold (1998).

5.2 Administrative Procedures

All of the four learners interviewed and conversation recorded in the e-forum showed that learners were unsure of administrative procedures that need to be done prior to the practicum. This was reflected in the e-forum posted on July 3, 2015 by Shafiqah binti Abdul Rahman:

"Hi Ma'am ... I'm going to start practice next week, do I have to tell Mrs. Nova? " e-forum posted on July 29, 2015 by Liew Mei Fung:

“Good afternoon madam ... I want to ask about the next practice. Actually I have done 6 weeks practical work, no supervisor came to the kindergarten to do monitoring on me in this six weeks, is this considered as practicum ? And what to do next, does the supervisor know I have done my practicum?”

There were also many instances when learners started the practicum early even before the beginning of the semester. This subsequently caused another problem of ensuring a tutor was hired in time to assess the learners before the end of the semester. Updating the faculty and providing the address of placement as well as the starting and completion date of practicum were not done efficiently hence bringing us to the next problem faced by the learners.

5.3 Confirmation of Assessment

During the six to eight weeks of practicum the faculty was responsible to hire a tutor to assess the learners teaching and classroom management abilities. However due to the distance and sporadic distribution of students it was difficult to do the exercise efficiently especially when learners do not inform the faculty staff early about their placement. This situation is made worse when learners do not start practicum during the same period. This is reflected earlier in Liew Mei Fung posting on July 29, 2015.

5.4 Confusion of Modules

Learners also reflected their disappointment with the practicum guidelines provided by the university. According to a BECHE learner, the practicum guidelines that was given to her by the learning centre has slightly different content from the one made available online. On the other hand a DECE learner felt demotivated and disappointed when she was given a practicum guideline that was written in Malay language (Bahasa Melayu (BM)). This was reflected in P1 interview in line 48 to 53:

“Disappointed in the first place when I got the BM module already. Ah ah at first they gave me the English module but then they call me up. Oh sorry they gave me the wrong module. And I have to go back to OUM. Then they gave me the BM one I say how you expect me to understand BM. All other subject English only one in BM. Suddenly they gave me a BM module. A bit ridiculous la.”

5.5 Lack of Supervision and Support during Practicum

According to practicum learners, co-teachers and principals did not gave them the support that they expected during practicum as teachers and principals seem to take them in as cheap labour or to cover for insufficient staff faced by centres. This was reflected in P1 interview in line 76 and 78:

“Because ah it’s a new school and very few children, she leaves things to me one way la. Most of the time she is not there also. But if I need her to comment anything she will la haha....”;

and P2 interview in line 23 dan 24:

“The teacher just left me because they have Potential Day so they are a bit busy. They just left me exactly with the kids. ”

There were also reports of principals not cooperating in sharing information and documents that need to be inserted into the practicum files such as sample of minutes of meeting, curriculum and others. Learners were also confused on how to do a proper observation, lesson plans, daily journals and reflection but that was assisted in the e-forum.

5.6 Communication Problem

According to the Faculty SOP procedure a form will be posted on myVLE where learners will access and fill in the practicum particulars and upload it back as soon as possible. The assigned staff would then get in touch with students to make arrangement for supervisory visitation. However, due to the confusion in procedure most learners did not inform the assigned staff on their placement earlier. This matter was made worse when the assigned staff do not answer emails and calls from students. This has caused learners a lot of frustrations and unnecessary worries on the date for supervisory visitation. This frustration was clearly reflected in the e-forum as well as in the interview.

Example from posting on e-Forum June 29, 2015 by Chin Pei Pei:

"Mrs Mahani, my practicum has completed and there is an email asking Pn. Nova about the supervisor coming for assessing my teaching but no response from Pn. Nova. "

6.0 Conclusion

In total there were five main areas of concern that were seen to be similar in the interviews and e-forum postings which need to be attended to immediately. Firstly, the learners were having problems in securing a placement for their practicum. This was not experienced before by OUM as most of our learners were government teachers who were already working in government preschools. As such, the learners only need to do their practicum in school under the supervision of a senior teacher and later assessed by a tutor from the university. However the situation has changed now where most of our learners are from the open market with a number of them are from different fields with totally no teaching experience. Hence obtaining a suitable placement is becoming a problem to the students. This is similar in previous studies as in Tackett et. al. (2001); and Maskooki et. al. (1998). The university is currently now in the process of signing MOU with several private preschools all over Malaysia to assist students in finding quality placements for practicum. An MOU or agreement needs to be signed between the organisation and the university to protect learners from exploitation by unscrupulous employers.

Personally, we feel most of learners confusion on administrative procedures would also be automatically resolved if the university takes an active role in assisting learners in acquiring placements for practicum. Monitoring of date of commencement of practicum and hiring of external supervisors or tutors would be easier if learners could be sent to certain centres as they are not spread sporadically hence the university need not have to hire too many tutors at a time.

Learners have also suggested having at least one tutorial at the beginning of the semester so that learners can get first hand information on what is expected of them during practicum. Support and constant supervision needs to be practiced to ensure the university produces quality teachers. Practicum placements are important links especially for distant learners in acquiring successful experience in real life experience teaching. This is where learners put into practice the theoretical essences and learn how to apply it correctly in a real work situation (Du Bey et al, 1985). Therefore, this learning experience should be monitored closely by the co-teacher and external supervisor / tutor as it has intentional goals that should be reflected actively on what is being learned throughout the practicum. If being implemented correctly it can be beneficial in learner socialising through teamwork assignments and training as suggested by Lubbers (2008). Learners experiencing practicum from good settings have also being noted to have been successfully developed personal skills such as information technology, time management, communication skills, teamwork, specialised knowledge and ability to specialise task (Mihail, 2006). Seeing the importance of practicum it would be ideal for Open University Malaysia to actually open an early childhood centre to provide quality setting and supervision for learners.

Learners also voiced out communication problems where emails and telephone calls were not answered. Another way of rectifying this problem is by having WhatsApp as a tool of communication. This could also assist student by giving additional support in terms of fast feedback on supervision of teaching and learning and problem solving of learner's issues in the setting.

Practicum modules need to be upgraded and content needs to be in line with the online version uploaded on myVLE. It would be a good idea for the university to produce bilingual modules (two languages in one module) so that learners would not need to complain on the mode of instructions being in BM or English.

This research has managed to uncover many challenges faced by OUM ECCE practicum learners yet this cannot be generalised due to the small sample number. Nevertheless, it would be a good kick start for further research in the future. Future research should also cover learners in the hinterlands or the inner areas of Sabah and Sarawak where accessibility is difficult which would make being an ODL learners very challenging. Future use of mobiles' applications such as WhatsApp could actually be used to keep in constant touch with learners and also for the learners to do daily reflection and receiving constant support and mentoring from the tutors. This should be the way forward for OUM to produce excellent teachers through ODL.

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COMPULSORY SUPERVISION PROCESS IN THE DISTANCE LEARNING SYSTEM IN THE DEPARTMENT OF LEGAL STUDIES: PERCEPTION OF STUDENTS

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Abstract

With the intention of providing both theoretical and practical knowledge, the Bachelors of Law Degree Programme of the Open University of Sri Lanka has prescribed a Project Report as one component of the subject of Jurisprudence (LWU4321) for the final year students. In preparing this Project Report, students are required to find an actual on-going case in any court and carry out deep analyses of every aspect of the case. Since the performance of students was not satisfactory in many areas of this Report, the Legal studies Department decided to implement a compulsory supervisory process for students when they were writing their Project Report. The main objectives of the present research are to identify student perceptions on this new intervention and to identify the advantages and disadvantages of this new system and to finally to make some recommendations for the future. Methodology, after the pilot test was carried out, questionnaires were distributed among students to gather data, at their final Day- School which took place after the submission of their Project Reports. Finally it was found that more than 90% of students were happy and were benefited by this system and 98% recommended that it continue this for future students too. However a majority of students did not agree to make this intervention a compulsory requisite in passing the Project Report. This was supported by another finding which of this research where it revealed that some students passed this Report, although they were absent at the supervision. A majority of students complained about the short time gap they had between the starting date of the supervision and the submission date. Finally this study recommended increasing this time gap for future students while making available this process for future but not making the intervention compulsory and providing an instruction sheet instead with clear instructions and allowing students to refer earlier reports.

Introduction

The LL.B Degree programme conducted by the Open University of Sri Lanka is a four year Degree and throughout the four year period students are required to submit different kinds of assignments for evaluation of their performances apart from sitting the final examinations in each year. One of the major assessment components which students have to complete in his/her final year is the submission of a project report for the subject of Jurisprudence (LWU4321). In preparing this Project Report, students are required to find an actual on-going case in any court and carry out deep analyses of every aspect of the case. For this report students are required to visit court hearings, meet the respective Attorneys-at-law and any other relevant parties which they consider are necessary. As the academic department, the Department of Legal Studies support students in different ways in completing this task. This includes conducting a 2 hour seminar guiding students in the way they should write the report, sending letters to attorneys-at-laws who have undertaken to guide the students , keeping old reports in the main library for students use and also personal advice if they come and meet an academic.

However due to several requests made by students and due to the concerns raised by academics in the department regarding the poor performances of some students in completing this project reports, the department introduced a compulsory supervision process for all students in the year 2013/2014. According to this new process every student was assigned to an academic who had the similar interests in the relevant case selected by the student. It was recommended to meet the supervisor at least twice before submitting the project report and students were required to attach the document containing the supervisor's signature to the project report.

This research was conducted to gather information from students of the final year after they had submitted their project report for the purpose of evaluating the effectiveness of implementing this new supervision practice.

Objective of the Study

There three objectives in doing this research.

1. To get the student perception on the newly introduced supervisory process in their project report assessment.
Under this objective it was attempted to identify whether students were benefited by this process and whether students are satisfied with the support given by the supervisor. Further the student attitudes towards the given project guidelines needed to be evaluated in this research.
2. To get the perception of supervisors regarding this new intervention.
Under this objective it was attempted to identify the problems faced by supervisors in engaging in this activity and to make recommendations for future academic years if they saw any defects in the process.
3. To decide whether this new intervention should continue in future academic years and if so should it be compulsory or optional.

Research Questions

This new intervention was an experimental one in student learning behavior. Therefore it was a question, for me to identify whether this new process is beneficial to them or not. In this context, particular, research questions were the followings.

1. What are the perceptions / attitudes of students and supervisors regarding this new academic intervention?
2. Whether the Department of Legal Studies should continue in this supervision process in future academic years? If so, is it as a compulsory exercise or optional exercise?

Significance of the Study

The LL.B Degree programme of the Open University of Sri Lanka is conducted in the open and distance mode and it is not compulsory for students to participate even in day- Schools (Lectures). Students do not get many chances as in a conventional university to share their ideas with lecturers. However making students to come and visit a particular lecturer and getting advice for his/ her project report was a new learning practice for law students. In this context, it is very significant to get and evaluate the feedback of students to ascertain perceptions of this new learning intervention. Further, it helps to get to know the students and supervisors perceptions about this new supervision process. The defects identified by the feedback given by both parties can be used to implement a better system in future academic years.

Literature Review

Most of the literature available regarding the supervisory process is focused on the post graduate level, at Masters, M.Phil or PhD. According to some interpretations this process can be defined as a “process; a supportive relationship; a helping process; a teaching- learning process; a reflective process; a career development process; a formalized process and a role constructed by or for mentors” (Roberts, 2000, 145). This interpretation was later defined in boarder terms to include caring, sharing, effort in enhancing another person’s growth and responding to critical needs (Shea, 1992). Further, Supervision is defined as intensive, interpersonally focused one-to-one relationship between the supervisor and the student (Abidden ,2011).The benefits of mentored research include greater understanding of a research topic, social and personal growth, and acquisition of skills for future employment (Miller, 2002). Parsonson (2011) opines that supervisors need to have clear guidelines on the University’s expectations of them as mentors. The guidelines should spell out the number of students an individual can effectively supervise at any given time. The procedures for developing and approving student projects to ensure that they are both manageable and within the student’s ability to undertake and complete within the required time span. When discussing the supervisory role the main characteristics of a good supervisor have to be identified. In a study done at the Australian National University, Canberra, the following characteristics; approachable and friendliness, supportive and positive attitude, open minded and prepared to acknowledge error, organized and thorough , and stimulating and conveys enthusiasm for research were identified as the main features of a good supervisor(Cullen et al, 1994).

Methodology

This study used the survey research method. A pilot test was done with 15 LL.B Level 5 (3rd year) students and slight changes were made to the questionnaire as a result of the pilot test. Both qualitative and quantitative data were collected using a questionnaire for students. The sample of the study consisted of 120, LL.B Final Year students who were present at the final Day-School in the 2013/2014 Academic year for the subject of Jurisprudence. This day fell after the students had submitted their Project Reports. Students of Kandy, Matara, and Colombo Regional centers in all media were selected for the sample and the same questionnaire was distributed among them on the day mentioned above. A structured interview was conducted to get the information from supervisors. These data were analyzed using both Qualitative and Quantitative methods. (Percentage, Tables, charts. ect...)

Research Design and Sample

Two main data collection instruments were used in this research. A questionnaire given for students contained specified 20 questions and, 17 were set for quantitative analysis. In these sections students were asked to rank their perceptions on many aspects which included satisfaction level of making two visits compulsory, whether supervisors guided them in the structure of the report, discussion of facts of the case, discussion of law, jurisprudence analysis and way of proper referencing. Further this questionnaire specifically questioned whether the project guideline document given by the department was helpful to them or whether any amendments should be made to this guideline. Further they were asked whether they faced any difficulty when getting an appointment from supervisors. Additionally they were asked to rank their choices for the questions on whether this process should be continued in future and whether this process should be made as compulsory requirements to obtain a pass in the project report. The final 03 questions were set for qualitative analysis and students were asked to reveal the problems they faced during the supervision process, advantages they acquired from the supervision process and the recommendations they were willing to make for a better supervision process in future academic years.

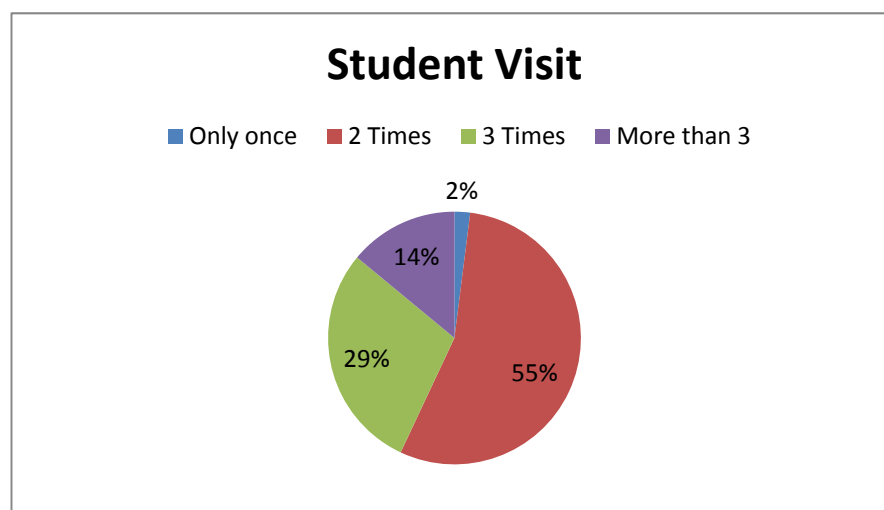
Sixteen academics were allocated for supervision and structured interviews were held with supervisors individually, except two due to unavoidable circumstances. They were asked about their perception on introducing this new method. Whether they faced any difficulty when making appointments with students, whether students were prepared before they came to visit them, whether they guided the students on particular areas of the report, whether they suggested to continue with this new process in future are some of the areas questioned in the structured interview. Both close ended and open ended questions were used in this instrument and both qualitative and quantitative methods were used for analyze.

Data Analysis and Discussion

Questionnaires were collected as follows and all questionnaires were answered by students

Regional Center	Sinhala Medium	English Medium	Tamil Medium
Colombo	57	22	10
Kandy	18		
Matara	13		

One of the questions raised by the questionnaire was the number of visits made by the students regarding this supervision process. The majority of students had visited twice to gain advices from the supervisor and it was 55% of the total sample. 29% of students had visited for the 3rd time and 14% of students had visited more than 3 times. 2% of students visited only once to meet the supervisor and according to the data of the sample none of them had been absent for supervision. This can be shown in the following figure.



Additionally when asking their perception about adopting this method for more than two times in future, 77% of students were with it while 21% of them were moderate in their view. Only 2% of students disagreed with this idea.

When asking whether the supervisor devoted adequate time with them discussing and clarifying issues relating to the project report, 88% of the student population agreed with this while 10% were moderate in their view. Only one student disagreed with this point. This shows that supervisors had worked with students at a satisfactory level in guiding them in the project report.

In analyzing the data regarding the appointments given for supervision it was revealed that 32% of students had not participated in the session at the given time. However a majority of students (68%) were able to meet their supervisors at the given time. On the other hand 2% of students reported that, the supervisor was not available when they presented themselves at the given time. However 98 % of students had not faced with this problem and supervisors were available at the given time.

When analyzing the data regarding the support given by supervisors in different parts of the project report, it can be shown as follows;

	Agree	Moderated	Disagree
Guidance on structure of the report	90%	9%	1%
Guidance on discussion of the facts of the case	82%	16%	2%
Guidance on discussion of law	73%	23%	4%
Guidance on jurisprudence analysis	60%	32%	8%
Guidance on using foot notes and references	62%	24%	14%

For the question raised regarding the guidelines given by the department it was revealed that more than 90% of students used it for making their project report, however 40% of students reported that, the above guideline was not very clear in some areas.

Finally, it was noted that 98% of students suggested following this method in future academic years. However 45% only reported that they wished to make this supervision a compulsory exercise for passing the project report.

Final three questions were set as open ended and students were questioned about the problems/weaknesses which they encountered under this new process. The major issue they raised was the lack of time between the starting day of the supervision process and the final day of submission of the report. They mentioned that they were not able to get the full benefit of this process because of this factor. The major concern of a very few students was the non availability of the supervision process during weekends and they had recommended it to be available so from next the academic year. A few students raised the issue that they were not given adequate time for supervision since a large number of students had been allocated to one supervisor. Further very few complained that there was a contradiction between guidelines provided by different supervisors and they were bit confused when they work as a group in writing process. Additionally they mentioned that, the instructions given in the guidelines, regarding the different jurisprudential schools were not adequate. However most of the students were not satisfied with the project report guideline given by the department as it caused a lot of confusions among them. Particularly, students were confused about the areas of page numbering, duplicating of some pages, structure, font types, abstract and introduction as these were not clear in the guideline.

When analyzing the benefits that students acquired from this new process it is satisfying to note that almost all the students had reason to be happy about this new system. Following are the benefits they identified

1. Students were able to clarify confusions arising from the guideline
2. Students were able to solve their different problems occurring at different stages of the writing
3. Students were guided into deeper study and they were guided to find relevant information among the available mass of information. Further elaborating on this some had mentioned that they were guided not to include irrelevant facts in their project reports.

4. Students were able to understand and clarify some complicated ideas in a simple manner.
5. Students were guided about the proper way of using references.
6. Students were personally guided to manage time with their other work and this helped to build their self confidence.
7. Students were encouraged by the supervisor who helped them to produce a creative product.
8. Some supervisors had read certain written parts and corrected them.
9. Students were given a chance to identify their mistakes and also the supervisor had helped them to overcome these problems.
10. Students were guided about the overall structure of the project report.

When discussing the feedback given by the supervisors it was revealed that, around 10- 12 students had been allocated for a supervisor and on an average between 20 minutes- 30 minutes had been devoted to the supervision for one student in one visit. Further many supervisors complained about the non attendance of students at the given time. Almost all the supervisors did not agree about attaching the document signed by the supervisor, to the student project report. There concern that, it could lead to pre assumption when marking. Finally it was noted that the supervisors too viewed this new process as beneficial for students. However they all made suggestions to minimize problems that arose.

Conclusion

According to the opinion of the students they were happy and benefited out of this new study intervention. However when analyzing the final grades of this project report, I have identified few incidents in both sides. There are some students who participated in the supervision process but failed. On the other hand there a few students who secured pass marks even though they had not come to a single supervisory session. That reveals that this process does not have a direct impact on the grade of a student but according to the feedback it is a good way for a student who needs additional guidance. The student perception of this new process is positive and 98% have recommended continuing it in future academic years.

Recommendations

To avoid certain problems raised by the students the followings can be recommended for future practices. First and foremost it is recommended to continue this process in future. However it should not be a compulsory requirement to pass the project report. To get the real benefit from this process the supervisory process should start as soon as possible once they had had their project report seminar. Although there was a suggestion from students to decreases the number of students allocated for one supervisor it cannot be done at this moment, due to the lack of staff available in the Department and the continuing increase in numbers of final yeas students. To overcome this problem it is advisable to arrange the appointments without inconveniencing both parties.

Additionally, if a student really wants to come on a Saturday or Sunday for a supervisory session it is good if supervisors can arrange it even after their Day-School. Further, it is recommended to amend the available guideline regarding this project report. As students suggested and supervisors agreed, it is good if a department can arrange a facility where a student can go through a previous year's project report. But this has to be done carefully by not allowing them to copy the contents of the previous report. Since most of our student's population is working students it is advisable to use new communication methods such as email, in supervision rather than conducting only the face to face

sessions. Finally, it is advisable to conduct a common meeting for all supervisors to brief them about the guideline before starting the supervisory process. This can help to minimize contradictions between supervisors.

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ON DEMAND SYSTEM OF EXAMINATION: INNOVATIVE PRACTICE AT NATIONAL INSTITUTE OF OPEN SCHOOLING, INDIA

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Abstract

*The present day society is constantly changing. As we move through the Information Age, technological advances are changing the functioning of many organizations and spheres. Education is not immune to these changes. Schools and universities cannot truly prepare students to function within society if the curriculum fails to cover the equipment and skills they will actually use in the real world. Open and distance institutions are now firmly established in India and in many developing countries. The Open Learning system is based on the needs of individual learner and controls what, where, when and how to learn. Here, the focus is on the learner and the learning process. The flexibility in the examination system also helps learner to pursue learning at his/her own pace of learning. This in fact is a key foundation behind the success of all distance and open learning programmes. Examination is often seen as a burden and not as a tool for enhancing the learning. Therefore it is very much the need of the hour to follow the flexi mode of examination so that the student can take examination as and when the learner is fully prepared. It has been felt for quite some time that the present system of conducting examination only once or twice a year and on fixed dates does not fully meet the criteria of openness and flexibility in learner's evaluation. Taking a note of the fact that the frequency of examinations is a major challenge, the NIOS has introduced ICT based On-Demand Examination (ODE) at Secondary (Class 10th) and Senior Secondary (Class 12th) stages of Education. This paper will address the benefits, scope and challenges of the ODES for the country as diverse as India. This paper will concentrate on the subtheme - **New Practices in ODL under the main Theme of New research and Practice in Open and Distance Learning (ODL) as a case in India.***

Key words: *On demand examination, flexibility*

Introduction

India's extreme diversity is well known. Its diversity can be seen in terms of geography, society, caste, religion, food, languages, flora, fauna, place of residence such as rural and urban areas, and so on. So how can education sector be not affected by it?

Under the Indian Constitution, the responsibility for providing education is mutually shared between Central and State Governments. The Central Government formulates policy guidelines, and plans frameworks. These guidelines are followed in accordance with the constitution of India and follow the concept of secularism and diversity accommodation. The State have the duty to implement these.

In India there are 3 National Level Boards of Education who have the jurisdiction in the whole of the country, where as the State Boards have it in their States.

In 1970 a Council of Boards of Secondary Education (COBSE) came into existence. COBSE is a voluntary association of State Boards. COBSE Provides academic support to its member Boards apart from developing framework for examination reform, conducting research on evaluation, curriculum and teaching methodology. In short it develops framework for quality of school education in India (cobse.org).

In India students come from diverse background and have different thinking capabilities. In the education system of India, ability of a student is decided by an exam. In this system there is no place for performance of a student in full academic session. Scoring more and more marks in exams has become the only aim of a student. The examination system of India has remained unchanged from so many years. It is quite stress full and the Impact of this stressful examination system is immense.

This faulty examination system is forcing so many students to commit suicide every year. The number of students committing suicide in the last few years has gone up. In present education system teachers, instead of assisting learning, spend most of their time assessing learning. Instead of enabling and equipping students to learn, schools have taken on the function of examining and screening out on the basis of those examinations. So, the need of the hour is to make possible changes in whole education system. Our education system needs examination reforms(Sharma 2014). Format of exams need to be changed.

Examination is an unavoidable part of educational act and its importance cannot be ignored. Numerous kind of examination system has been recognized since human being able to take a firm stand. In the field of education too many method has been applied to make the examination more reliable and beneficial.

Evaluation is a means of realizing the extent to which we have been successful in imparting such an education. Evaluation is an indispensable part of the educational process as some form of assessment is necessary to determine the effectiveness of teaching learning processes and their assimilation by learners.

External exams make no allowance for different types of learners and learning environments and induce an in-ordinate level of anxiety and stress”.(NCF- Position paper on Examination Reforms)

Open and Distance Learning (ODL)

India's National Open School (NOS) was established in 1989 by the Government to reach those who had dropped out of school or never been to school and who wished to study but were for a variety of reasons not studying in regular schools. Over the years, the role of NOS expanded beyond the provision of bridging courses, an alternative secondary/higher secondary curriculum and life-enhancing courses, to include from vocational education. In 2002, NOS was re-mandated to act as the national apex body for open schooling, and re-designated as The National Institute of Open Schooling (NIOS). NIOS is both a teaching, and an examining and accrediting organization.

NIOS can be described as offering an alternative system to formal schooling and is termed as Mega School (Daniel 2010) with the cumulative enrollment of 2.71 million students . Every year nearly 5 lakhs students take admission in various programmes of NIOS. The vast majority of NIOS's secondary school students are out-of-formal-school learners and school drop-outs, working adults, housewives, sports personalities, learners from disadvantaged sectors of society and learners living in remote areas of India. The scale of the demand for secondary education places in India means that NIOS and the various State Open Schools will continue to have a major role in the future.

Examination in NIOS

The Open Learning system is based on the needs of individual learner. Open learning enables the learner to control what, where, when and how to learn. Here, the focus is on the learner and the learning process. The flexibility in the examination system also helps learner to pursue learning at his/her own pace of learning. This in fact is a key foundation behind the success of all distance and open learning programmes.

Need for Reform in the Examination System

The National Institute of Open Schooling (NIOS) conducts two examinations during April and October every year. It has been felt for quite some time that the present system of conducting examination only once or twice a year and on fixed dates does not fully meet the criteria of openness and flexibility in learner's evaluation. Taking note of the fact that the frequency of examinations is a major challenge, National Institute of Open Schooling has been working on the concept of On-Demand Examination (ODE) at Secondary Level since 2003 in the area of its feasibility and operationalisation. The novel concept of ODE is a great step in the direction of flexibility to the open and distance learning. This will make the total system of examination independent of the time frame and will help the student to take up the examinations as per their wish and preparation. The basic concept of On Demand Examination is that NIOS Student can walk into the examination center as and when he/she feel ready for the examination. NIOS re-introduced the ODES at Secondary level in 2005. With the success of ODE at Secondary level, NIOS started the On-Demand Examination in Sr. Secondary also from October 2007. At present, ODES is being conducted at NIOS HQ at NOIDA and at its 18 Regional Centers/Sub Centers of NIOS in all the subjects at Secondary and Sr. Secondary level (www.nios.ac.in)

The Concept of ODE is that under ODES, a unique question paper having defined number of items is generated randomly by the computer (on the day of the examination) out of the already developed question bank on the basis of question paper design and the blueprint of the subject. The question paper is unique for each student.

Features of the Scheme of On-Demand Exam

This innovative and flexible scheme of On-Demand Exam is independent of the traditional fixed time frame and has the following features:

- ODE allows the student to take examination when he/she is ready. Readiness depends on the Student and not on the institution. Choice of deciding the date of exam lies with students.
- Most importantly ODE reduces the threat of failure in examination thereby removing frustration, loss of self esteem, peer group ridicule, and depression which are generally characterized by the Examination.
- Since under ODE, information about result is immediate, success even bits is a strong motivating factor.
- ODE is also helpful in containing malpractices in examinations, as it is a system where the tools for evaluation are unique for individual student. The question paper for each Student is different having comparable difficulty level.
- Students can register online for On-Demand Exam anytime from anywhere,
In NIOS almost the following table gives an view of the number of learners appeared and certified under the ODES from 2008 onwards.

Table 1: Number of Learners Appeared and Certified in NIOS

Years	Appeared	Certified
2008-09	12268	3081
2009-10	14531	5434
2010-11	30200	9910
2011-12	51344	17623
2012-13	52262	20419
2013-14	40276	11009

Hence it was thought that to support my views on the need for the examination reforms the feedback from the students was obtained on the On Demand Examination who came in for the ODE exam by administering the questionnaire. The questionnaire was administered to the students after the examination was over. About 1500 students were administered the questionnaire but only 1067 students gave their views.

One of the questions in the questionnaire was as why they (learner) choose to appear for on demand examination. 37% of learners mentioned that they felt it was an easy option whereas 43 % felt that it is less stressful, 49 % of learner's objective was to clear the subject, 75 % of learners aim was for higher education and 54 % of learners appeared for the improvement of marks.

Table 2: Why did you choose to appear for the on Demand Exam?

S.No	Question for student	Student response Yes		Student response No		No Response	
		No.	%	No.	%	No.	%
1	An easy option	400	37	178	17	489	46
2	Less Stressful	455	43	101	9.5	511	48
3	Did not clear the Subject	523	49.0	95	8.9	449	42.1
4	For Higher Education	798	75	58	5.4	211	20
5	Improvement of Marks	576	54	56	5.2	435	41

When the learners were asked to give their option for the introduction of ODES in other Educational Boards, the 78 % supported it and agreed that it should be introduced in other boards too.

Table 3: Should ODES be introduced in other School Board too?

Student response yes		Student response No		No Response	
Number	%	Number	%	Number	%
837	78.4	151	14.2	79	7.4

Learners were also asked on the conduct part of ODES and 91 % of the learners who appeared for ODES were satisfied with the way the theory exam was conducted in NIOS.

Table 4: Are you satisfied the way the on demand exam (theory) is conducted in NIOS?

Student response Yes		Student response No		No Response	
Number	%	Number	%	Number	%
972	91.1	50	4.7	45	4.2

Similarly the views on the conduct part for the practical exam was also taken and 87 % of the learners said that they were satisfied with the way the practical examination are conducted.

Table 5: Are you satisfied the way practical for the On Demand exam are conducted

Student response Yes		Student response No		No Response	
Number	%	Number	%	Number	%
928	87.0	60	6	79	7

When the learner were asked about the paper administered in ODES on a particular day , it was found that 34 % of the learners said that paper easier than the public exam , 36 % felt it was tougher than the public exam, 47% replied that language of question paper was easy to comprehend and 41.5% offered no comments.

Table 6: Views Regarding the ODES Paper on a Typical Day

S.No	Question for student	Student response Yes		Student response No		No Response	
		No.	%	No.	%	No.	%
1	Easier than the public exam	368	34	291	27	408	38
2	Tougher than the public exam	381	36	258	24	428	40
3	Language easy to comprehend	500	47	252	24	315	30
4	Can't say/ no comments	443	41.5	-	--	624	58.5

What Learners Say about ODES

When open response was asked regarding the improvement in the ODES the main response was regarding the

- Development of online app for ODES.
- As this system is very flexible in terms of the examination date, one can prepare for the examination according to one's availability of time.

- They get enough time for preparation and they can improve as many times as they want.
- There is no fix time for registration. The students can register on any day for writing the examination.
- We can plan to appear in the examination as per our preparation and get the chance to re-appear immediately in the very next month.
- Many students could save their one precious year and joined standard 12th in the regular stream after clearing standard 10th through ODE.

Conclusion

Implementation of the On-Demand Examination has proved that it is learner centric, learner friendly and stress free examination system. It has established transparency in the examination system. The On Demand Examination is conducive to establish the autonomy of learner in the pace of study. If the facility of On-Demand Examination is provided in other boards it would bring a revolutionary change in the education system.

Not only is ODE independent of time but it also allows the learners to improve their performance till they are satisfied with the mastery level set by them individually. Thus, ODE has extended and enhanced the dimension of openness in the Open Schooling System where examination is self paced and degree of performance is learner controlled. Undoubtedly such a system provides a non-threatening evaluation system vis-a-vis the traditional fixed schedule Public Examination. ODE reduces pre examination stress.

Indian system of Education should implement this wonderful system in other boards of examination too.

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REACHING THE UNREACHED THROUGH OPEN DISTANCE LEARNING – CASE STUDY OF GRAMINDAKSEWAKS (GDSS) OF INDIA

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Abstract

National Institute of Open Schooling (NIOS) is the largest Open Schooling System in the world. The NIOS has risen to the occasion to provide responses to certain educational challenges, particularly to the challenge of 'reaching the unreached'. The mission of NIOS is to cater to the educational needs of the prioritized target groups (rural and urban people, disadvantaged groups, underprivileged sections of society, school drop outs people with special needs etc.) for equity and social justice. Rural post offices are served by the Gramin Dak Sewaks (part time semi skilled workers), branch post masters and delivery agents. Department of post has employed more than two lakh GDSS across the country. The Postal Department (DOP) intends to improve their academic qualifications and to upgrade existing skills. In view of this, Collaborative Project has been undertaken by NIOS with Ministry of Communication and Information Technology (Department of Posts) Government of India to develop Rural Entrepreneurship Programme for these employees. Rural Entrepreneurship Programme (REP) for GDSS has been initiated in pilot mode across seven states NIOS has identified six modules ,comprising financial management ,insurance services, entrepreneurship ,accounting ,basic computing and language skills in consultations with DOP to suit the requirement of GDSS. The focus in these modules is on skill development. Self instructional materials (SIM) or course materials for distant learners have been designed and developed by subject experts at NIOS and Tata Institute of Social Sciences , Mumbai. In pilot phase, 2000 GDSS have been registered across seven states and 1792 GDSS have appeared in examinations conducted by NIOS and 461 GDSS have been certified. The present paper deals with the case study of Gramin Dak Sewaks focusing on admission issues , course materials development along with their assessment and certification.

Introduction

“In the Indian way of thinking, a human being is positive asset and precious national resource which needs to be cherished, nurtured and developed with tenderness and care coupled with dynamism” (NPE 1986).

The major challenges while searching to find solutions to the educational problems are Challenge of numbers, Challenge of credibility and Challenge of quality. As the possession of basic knowledge and skills for life becoming an imperative, the emergence of Open and Distance Learning System (ODLS) has been the most relevant and appropriate revolution to meet this challenge. While the conventional system continues to be the mainstream for educational provision, a significant percentage of its users find it too rigid and restrictive to suit their needs and conditions. That explains the rapidly growing shift and deliberate choice of distance learning as an alternate provider of education.

ODL system has the significant potential to add value through its academic, vocational and life enrichment courses, stressing not merely subject mastery but also adding life skills and soft skills to the curriculum. Thus, even while it complements and supplements the formal system, it also becomes more and more the preferred choice of growing number of learners. In ODL system, National Institute of Open Schooling is the largest open schooling system in the world.

The National Institute of Open Schooling (NIOS) formerly known as National Open School (NOS) was established in November, 1989 as an autonomous organisation in pursuance of National Policy on Education 1986 by the Ministry of Human Resource Development (MHRD), Government of India. NIOS is providing a number of Vocational, Life Enrichment and Community oriented certificate and diploma programmes besides the Secondary and Senior Secondary level programmes.

NIOS is vested with the authority to examine and certify learners registered with it up-to pre degree level courses. With about 2.71 million students on its roll (2015), NIOS is credited to be the largest open school in the world with noticeable popularity in the Commonwealth countries and certain other developing and developed countries. The NIOS programmes are offered through its study centers (named 'Accredited Institutes' for academic programmes and 'Accredited Vocational Institutes' for vocational programmes). The NIOS works as a nodal institute for carrying forward the open school movement in the country in order to achieve the objective of developing an inclusive learning society. The mission of NIOS is to cater to the educational needs of the prioritized target groups (rural people, disadvantaged groups, underprivileged sections of society, school dropouts and people with special needs).

Keeping the above in view NIOS entered into an agreement in the year 2011 with Department of Posts to impart skill to their untrained workers who are working at post offices across the country. Thus a collaborative project has been undertaken by NIOS with Ministry of Communication and Information Technology, Government of India to develop Rural Entrepreneurship Programme. The present paper deals with the case study of Gramin Dak Sewaks.

Background of the Project

Rural post offices are served by the Gramin Dak Sewaks (GDSs), Branch post masters and delivery agents (part time workers) with educational qualification of class 8th pass with five years' experience as Gramin Dak Sewaks or class 10th pass and above. Department of Posts has employed across the country more than two lakhs GDSs. The postal department intends to improve their academic qualifications/ to upgrade their existing skills. Moreover, it is expected that the programme will be useful in enhancing their work efficiency. In view of this, Department of Posts has proposed to develop Rural Entrepreneurship Programme for these employees in collaboration with National Institute of Open Schooling (NIOS). Initially, the course can be implemented on pilot basis in selected states in consultation with Department of Posts (DOP). In the meeting with DOP officials, it was decided that Certificate in Rural Entrepreneurship Programme will basically include financial management, insurance services, entrepreneurship, accounting, basic computing and language skills and will be of one year duration.

Admission of GDSs

In pilot phase of the project, 2000 GDSs have been admitted across seven states of India. State-wise and gender-wise admission of GDSs is as under.

Table 1.1: State Wise and Gender Wise Admission of GDSs

S. No.	States/Name of the Circle	Gender		No. of GDSs
		Male	Female	
1.	Assam	165	35	200
2.	Gujarat	296	4	300
3.	Maharashtra	292	8	300
4.	Rajasthan	298	2	300
5.	Tamil Nadu	207	93	300
6.	Uttar Pradesh	277	23	300
7.	Karnataka	233	67	300
	Grand Total	1768	232	2000

Source: Admission forms of GDSs, Department of Posts, Government of India

From Table 1.1 it can be inferred that state-wise/circle-wise admissions is 300 GDSs per circle/state excluding Assam circle where 200 GDSs have taken admission in Rural Entrepreneurship Programme. In total 88.4% males have taken admissions and 11.6% females have taken admissions in REP for GDSs. In pilot phase, only seven states have been taken but in future more states may be included to have wider coverage. Admission in REP for GDSs is voluntary. Since, GDSs are part-time employees of Department of Posts in rural areas one of the reasons for disparity in female enrollment may be less number of female employees. Apart from that, another reason may be job profile of GDSs (they have to travel from one place to another during office hours).

Table 1.2: Category Wise Admissions

S. No.	States/Name of the Circle	Category		No. of GDSs
		General	Others/Disadvantaged Learners	
1.	Assam	175	25	200
2.	Gujarat	237	63	300
3.	Maharashtra	255	45	300
4.	Rajasthan	256	44	300
5.	Tamil Nadu	244	56	300
6.	Uttar Pradesh	260	40	300
7.	Karnataka	237	63	300
	Grand Total	1664	336	2000

Source: Admission forms of GDSs Department of Posts, Government of India

From Table 1.2 It can be said that out of the total enrollment of GDSs in pilot phase 1664 learners are in general category and remaining learners i.e. 336 are in other categories. In total 83.2% learners are in the general category and the percentage of learners in other categories is small i.e. 16.8%. In comparison to general category (As mentioned in Table 1.2) the number of disadvantage learners is less in each circle due to lack of qualification as prescribed in REP for GDSs.

Course Development

In order to reach GDSs, NIOS has identified the modules in consultation with DOP to suit the requirements of GDSs. This course has six modules. These are Foundation Course –I : Idea of India , Foundation Course –II : Entrepreneurship, basic computing, Accounting and Finance, Banking and Insurance and Communication skills in English. In vocational courses, the focus is on skills development. These skills relate to the head, heart or hand or to one's health. These skills enable a person to live one's life effectively and efficiently. One must make special efforts to acquire certain skills or competencies to deal with the diverse conditions in the economic, social, technological field. The WHO defines these skills as abilities to face day to day complex situations successfully and adjust with them efficiently. The basic feature of the open distance learning system is flexibility and readiness to adapt to suit the needs of learners to the extent possible.

Self-instructional materials (SIM) are referred to as 'teacher in print'. The different lessons/chapters in SIM are usually self-explanatory, self-contained, self-motivating, self-evaluating and interactive. Unit is a combination of lessons/chapters and module is the combination of units/lessons/chapters etc. Every lesson/chapter follows the following format.

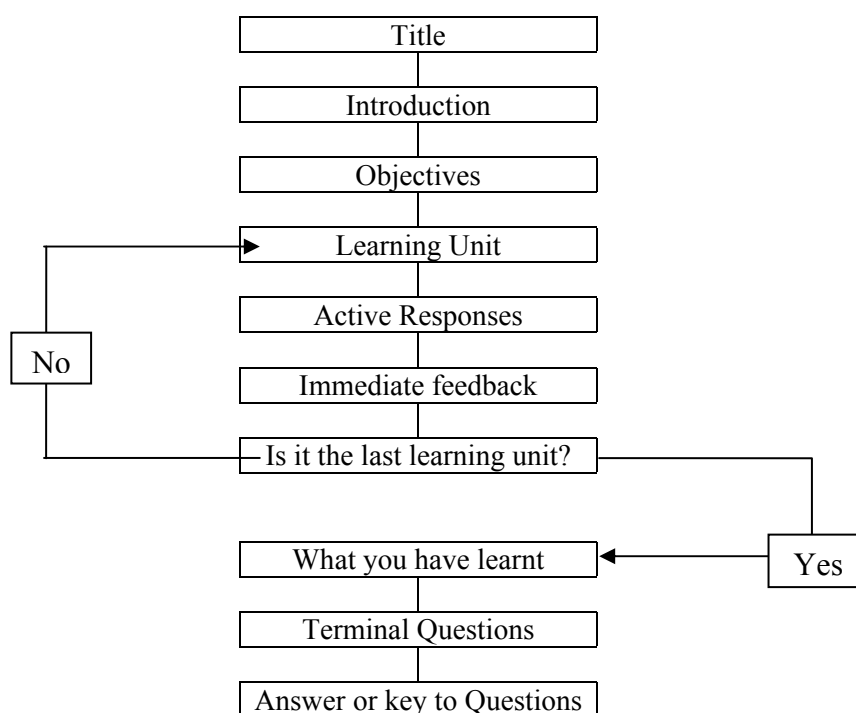


Fig 1.1: Format of a lesson/chapter
Source: NIOS: *The Way Forward* 2009

The introduction not only introduces the topic but also links to what has gone before. It helps to relate the topic to the life experiences of the learners and to give the learners an overview of the whole lesson. The objectives define the learning outcomes of the lesson in behavioral terms. The learning content is then broken into small sections to make it easier for learners to understand and absorb. After every section, learners can assess their understanding by answering the intext questions. The

summary reviews the information given in the lesson, reinforcing the important learning points. The terminal questions at the end of lessons give another chance to the learners to assess their progress. Course planning, design, development and dispatch is a long process and the long time taken between the initiation and the production of the printed material is because of the several stages that the self-instructional material goes through.

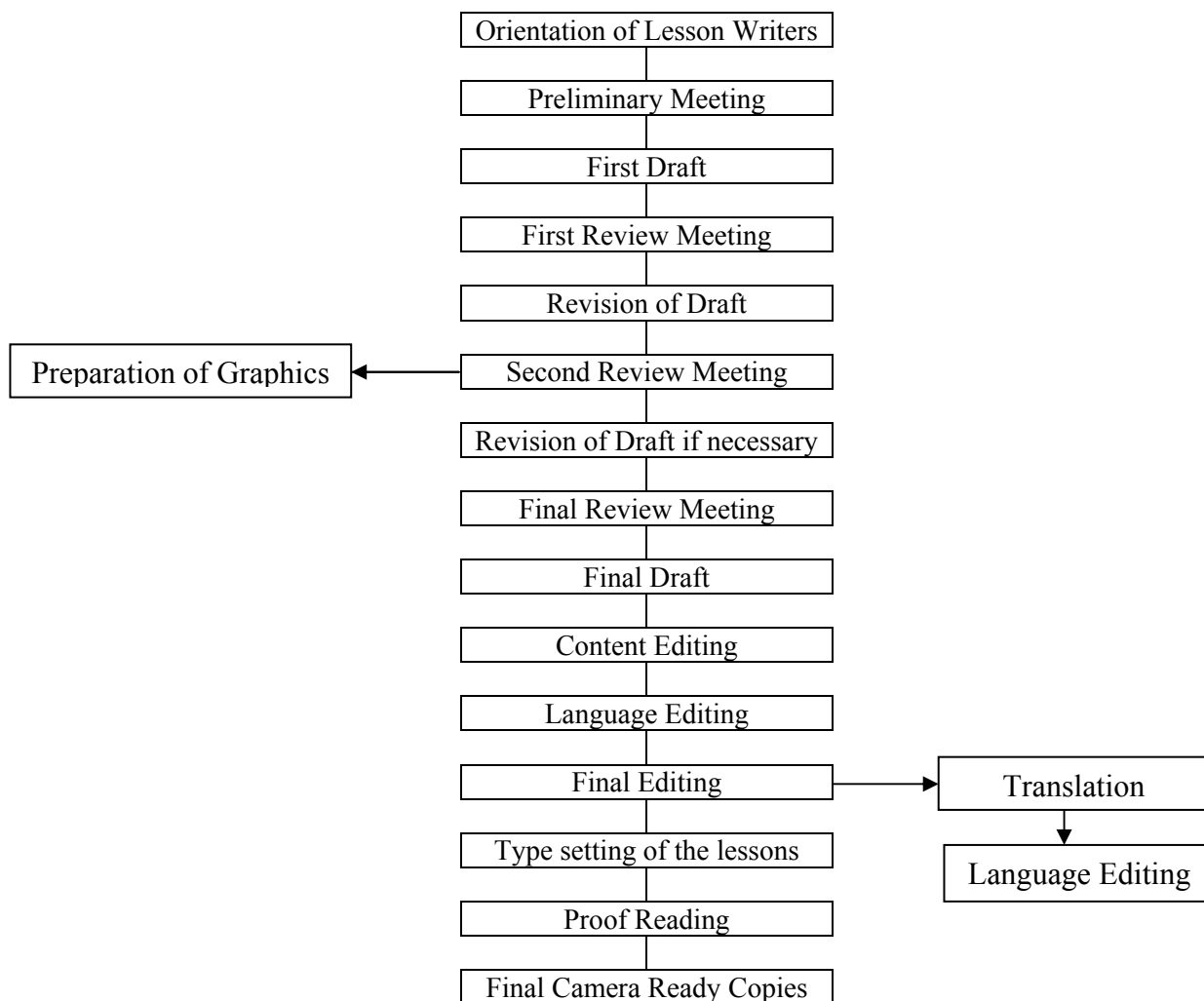


Fig 1.2: Material production stages

Source: Biswas and Priyadarshini, *Distance education at school level*

The subject coordinator develops the sample lesson so that he or she becomes familiar with how to write a lesson/chapter and how to guide the lesson writers later on. Once the lesson writers, content editors and language editors have been identified and selected, an orientation programme is organized for them. Orientation includes, amongst other things the salient features of self-instructional materials and how they differ from conventional text books. The lesson writers are given the guidelines to be followed while developing the lessons for distance learners.

After lessons are written by lesson writers, the draft lessons are obtained by the subject coordinator. Later on, these lessons are reviewed in review meetings keeping in mind sequence of ideas, accuracy of facts and figures, language used etc. The lesson writers take the note of suggestions and incorporate them before the next review of the lessons.

After the second review meeting, the lessons are sent further for the content editing and later on for language editing by the language expert. Simultaneously, the illustration/graphics chosen are prepared by the graphic artist. As per the prescribed format, question paper design, blueprint, sample question paper and marking schemes have been developed for each module. Finally, these lessons are edited from the point of view of in-house style by the subject coordinator. The final Camera Ready Copy is sent for printing. Training manuals have also been developed for GDSs.

Translation of the Course Materials

After the lessons are finalized in English version in consultation with DOP for the concerned module, these have been simultaneously sent for translation in Hindi, Assamese, Gujarati, Marathi, Tamil and Kannad. The translation work of Certificate in Rural Entrepreneurship has been completed by NIOS through its regional centers.

Delivery Mechanism

NIOS provides multimedia learning package in which the printed self-instructional materials are the main method. Further support is provided by organizing orientation programmes for master trainers in consultation with DOP for the Rural Entrepreneurship Programme. These master trainers have trained GDSs at the designated training centres. Assignments have been submitted by GDSs to the postal circles and later on these assignments have been evaluated by the subject experts at the regional centres of NIOS.

Evaluation and Assessment

Evaluation and assessment is an integral component of any teaching-learning system. The government of India in 1990 vested in NIOS with the authority to examine and certify students up to pre-degree level and thus the NIOS became one of the National Boards of Examination. It is the only Board which conducts two full-fledged examinations every year.

NIOS does not have any infrastructure of its own. It shares the infrastructure and human resources of the institutions established by public and private sectors to conduct its examinations. NIOS gives a lot of flexibility to its learners in matters related to examinations such as no compulsion of appearing in all subjects at the same examination, appearing in one or more subjects as per their convenience, credit accumulation of the subjects cleared, nine chances over a period of five years, etc. A student is allowed to write answers in any of the scheduled languages of India.

In order to provide reliability, validity and credibility to the examination system of NIOS, several in built checks and balances have been incorporated into the system to ensure quality and standard of the question papers. The question papers are developed on the basis of question paper design and blueprint. Besides Hindi and English mediums, the question papers have been developed in other regional mediums. As per the convenience of GDSs examination centres have been fixed through regional centres. Table 1.3 shows the number of GDSs registered and appeared circle-wise.

Table 1.3: Number of GDSs Registered and Appeared

S.No.	Name of the Circle	Name of Division	Registered	Appeared
1.	Assam	Darang	46	45
		Guwahati	45	36
		Jorhat	34	33
		Sivasagar	25	23
			150	137
2.	Gujarat	Ahmedabad	8	8
		Baroda	190	190
		Gandhinagar	87	87
			285	285
3.	Karnataka	Mysore	93	93
		Ramanagar	92	90
		Tumkur	84	83
			269	266
4.	Maharashtra	Kolhapur	143	143
		Nasik	146	145
			289	288
5.	Rajasthan	Ajmer	93	91
		Jaipur	89	87
		Sikar	96	96
			278	274
6.	Tamil Nadu	Kanchipuram	149	148
		Thanjavur	151	151
			300	299
7.	Uttar Pradesh	Faizabad	92	92
		Gorakhpur	83	83
		Lucknow	70	68
			245	243
		Grand Total	1816	1792

Source: NIOS Annual Report 2013-14

Table 1.3 shows that in Assam circle 150 GDSs have registered for examination from different divisions and 137 appeared in public examination, conducted by NIOS at designated locations. In Gujarat circle, 285 GDSs registered for examination and 285 GDSs appeared for examinations. In Karnataka circle, 269 GDSs have registered and 266 have appeared for examination conduct by NIOS. In Maharashtra circle, 289 GDSs have registered and 288 have appeared for examination. In Rajasthan circle, 278 have registered and 274 have appeared in examinations. In Tamil Nadu circle, 300 GDSs have registered and 299 have appeared. Lastly, in Uttar Pradesh circle, 245 GDSs have registered and 243 have appeared in examination computed by NIOS. Out of 2000 GDSs enrolled from different circles 90.9% GDSs have registered for examinations and 98.67% GDSs have appeared in Public examination.

Table 1.4: Number of GDSs Appeared and Certified

S.No.	Name of the Circle	Name of Division	Appeared	Certified	
				No.	%
1.	Assam	Darang	45		11.11
		Guwahati	36	0	0.00
		Jorhat	33	2	6.06
		Sivasagar	23	0	0.00
			137	7	
2.	Gujarat	Ahmedabad	8	2	25.00
		Baroda	190	8	4.21
		Gandhinagar	87	18	20.69
			285	28	
3.	Karnataka	Mysore	93	51	54.84
		Ramanagar	90	12	13.33
		Tumkur	83	25	30.12
			266	88	
4.	Maharashtra	Kolhapur	143	54	37.76
		Nasik	145	94	64.83
			288	148	
5.	Rajasthan	Ajmer	91	1	1.10
		Jaipur	87	9	10.34
		Sikar	96	15	15.63
				25	
6.	Tamil Nadu	Kanchipuram	148	34	22.97
		Thanjavur	151	44	29.14
				78	
7.	Uttar Pradesh	Faizabad	92	8	8.70
		Gorakhpur	83	61	73.49
		Lucknow	68	18	26.47
			243	87	
		Grand Total	1792	461	25.73

Source: NIOS Annual Report 2013-14

Table 1.4 shows that in Assam circle 137 GDSs have appeared from different divisions and only seven GDSs have been issued Certificates and Mark Statement by NIOS and the remaining GDSs have been issued only Mark sheets by NIOS. In Gujarat circle, 285 GDSs have appeared and 28 GDSs have been issued certificates and remaining have been issued Mark sheets. In Karnataka circle, 266 GDSs have appeared and 88 GDSs have been certified by NIOS. In Maharashtra circle, 288 GDSs have appeared and 148 GDSs have been certified by NIOS. In Rajasthan 274 GDSs have appeared and only 25 GDSs have been certified by NIOS. In Tamil Nadu circle, 299 GDSs have appeared and only 78 have been certified by NIOS. In Uttar Pradesh circle, 243 GDSs have appeared and only 87 GDSs have been certified. It can be said that out of 1792 GDSs appeared, 461 GDSs have been certified and remaining have been issued Mark sheets.

Conclusion

This paper is regarding the introduction and implementation of REP for Gramin Dak Sewaks, Department Of Posts, Government of India with the objective to enhance their skills and knowledge and to provide them with the opportunities for further growth. The course materials have been specially designed and developed by the subject experts at NIOS keeping in mind the requirement of GDSs who are working in rural post offices across the country. In Pilot Phase 2000 GDSs have been registered across seven states and 1792 GDSs have appeared in examination conducted by NIOS and 461 GDSs have been certified. In next phase, more states may be included to have Pan-India coverage. In open learning, face to face contact is very limited and learners are at distance. The teaching methodology is distance education mode. In such a scenario, open schooling has to depend heavily on the use of Information and Communication Technology (ICT). Under the programmes and activities of NIOS, ICT is being used as a major strategy towards reaching the unreached. With the use of ICT, the course materials may be converted into e-learning mode in consultation with Department of Posts, Government of India in coming years.

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RESEARCH AND PRACTICES IN OPEN AND DISTANCE LEARNING FROM NIOS PERSPECTIVE IN INDIA

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Abstract

Research plays an important role in strengthening any institution. Since, last three decades the role of research has been deeply broadened. Now, it is an important component for open and distance learning system to decide its future course of action for its effectiveness, particularly when it comes to flexibility and openness. Although, researches in open schooling not only identify the core areas but also strengthen institution in reference to open and distance learning. Research in NIOS allows other stake holders and individuals to do research and identify topics particularly on the open and distance learning as a whole to identify the loop-holes and challenges to improve the existing system. Research practices in National Institute of Open Schooling, works in the area of the preparation and operationalisation of the centrally sponsored scheme for promotion of open schooling, advocacy, consultancy and resource support to states for up-scaling of existing State Open Schools (SOSs) and setting up of SOSs in remaining states of India. Further, it prepares guidelines for planning, monitoring and evaluation of outcomes of NIOS programmes. Apart from these activities, it also identifies thrust areas of research in open schooling, formulates and operationalize Scheme of Grant-in-Aid for Research Projects in Open Schooling (GRPOS). Apart from in house research, it also outsources research projects at national level. This paper is an attempt to identify new thrust areas in research in open and distance learning where more systematic research is required to strengthen the existing system. It focuses on the various areas of research activities which has helped NIOS to function smoothly and work on the goal of reaching the unreached.

Introduction

India has witnessed phenomenal expansion in education system in recent years. In a developing country like India where education is a fundamental right, National Institute of Open Schooling (NIOS), world's largest open schooling institution, is serving the educational needs of a large segment of the Indian population. With enrolment of over 27.1 lakhs (2.71 million) learners on its rolls across the country covered through 20 regional centers it has more than 6400 Accredited Institutions (Study Centres) in India and abroad.

NIOS is an "Open School" to cater to the needs of a heterogeneous group of learners at school education level was set up in 1989, later re-christened as the National Institute of Open Schooling (NIOS) in 2002, with an objective to:

- Universalization of education (education for all)
- Increase social equity and justice, and
- Develop a learning society

National Institute of Open Schooling (NIOS) plays a significant role in educating all. The single line charter of NIOS is "Reaching the Unreached" through open distance learning mode. It has heterogeneous prioritized target group of "unreached" which includes school dropouts and marginalized groups such as rural poor youths, girls and women, scheduled castes and scheduled tribes, backward classes, educationally backward minorities, differently abled people and ex service personnel.

Research at NIOS

Research plays an important role in strengthening any institution. Since last three decades the role of research has been deeply broadened. Now, it is an important component for open and distance learning system to decide its future course of action for its effectiveness, when it comes to flexibility and openness. NIOS has now entered in 27 years of its existence and to continue successful operations for future growth, establishing its credibility and monitoring the progress it has to constantly develop, innovate and improve its services and courses through the insights provided by in depth research.

With these objectives, NIOS established its Research and Development Cell in 2009 to promote research and development that promises to augment past knowledge and craft a vivid future in the field of Open Schooling.

Aims and Objectives

Amongst the objectives of NIOS, the objectives concerning research are:

- To undertake research studies, and surveys from time to time, to obtain feedback on the quality of the materials developed, facilitation and support offered to students in their study, and on the effectiveness of all the support structures and procedures used by the institution in pursuance of its aim and objectives.
- To identify and promote standards of learning in distance education system and open schools which may be set up in different parts of the country, through research & evaluation and to maintain standards of equivalence with formal system while retaining its own distinct character.

Role of Research Advisory Committee (RAC)

The Research Advisory Committee (RAC) chaired by Chairman, NIOS, formulates and suggests the thrust areas for research projects, scrutinizes and approves projects from other institutions and of internal faculty members for award of grant-in-aid. The Research and development cell constantly monitors the status of the research projects and evaluates the outcomes and end products of the research projects sanctioned by NIOS.

Research Policy in NIOS

Research policy in any institution guides the overall administration of research, including defining research priorities, creating organizational structure for research and development activities, funding and monitoring of research projects. In order to develop NIOS to an institute of excellence guiding development of quality open schooling in India and maintain its leadership in open schooling in the world, NIOS has put research in Open Schooling as a priority area to contribute to development of new methods, innovations and theories and has formulated a research policy “Scheme of Grant- in-Aid for Research Projects in Open schooling”.

Scheme of Grant- in –Aid

Under its Scheme of Grant-in-Aid for Research Projects in Open Schooling (GRPOS), grant-in-aid are being provided to in house faculty as well as organizations/institutions which desire to conduct research in the prioritized areas identified by NIOS.

Research in Priority Areas

1. *Accessibility of Open Schooling System*

There is an urgent need for open schooling to contribute to education for all and development of a learning society in a much larger and expanded operational format so that the challenge of providing education to a large number can be achieved. A large number of dropped out students and persons are mostly left behind under the existing system of open schooling. Thus, NIOS has undertaken various research projects and research surveys in many states of India to reach the unreached learners. Research studies on accessibility of NIOS and the constraints both from learner and institutional point of view, which is preferably on national basis along with studies on critical review of the flexibilities and openness in the Open Schooling System are being taken up for the research study to improve existing accessibility of open schooling for learners. Mahapatra (2013) in his study found that different academic and non-academic factors are affecting enrolment in different subjects of NIOS. Major findings of the study revealed the reasons which effect enrolment- academic aspects like heavy curriculum and compulsion of tutor marked assignments and non academic factors like inadequate publicity of NIOS and distance of study centres from residence of students.

Sharma (2014) got the feedback on access and success of learners in Chhatisgarh state. Major findings of the study revealed that students were quite satisfied with the curriculum of the open school and it was found suitable for students' educational progress and growth. It was also found that learners who were successful through open school examination continued their higher education successfully. Vocational education was found sufficient enough to improve vocational skills of learners.

Findings of the recent studies have shown reach of NIOS in almost every part of the country and in abroad. It helped NIOS to understand need and requirement of the learners. Factors like heavy curriculum and compulsion of TMA burdened NIOS learners, but at the same time learners are satisfied by flexibility and openness of NIOS. They are also satisfied with the system as they could continue their further higher education.

But, still large segment of the population is deprived of education. Here, NIOS has to play a great role to educate the unreached. NIOS has initiated research to increase advocacy and awareness in both academic and vocational courses.

There are researches underway in NIOS in the area of accessibility of open schooling for tribal students; need analysis studies for expansion of NIOS; as also reach of open schooling in hilly areas and north east state of India. Outcome of these studies will be helpful to substantiate demand for expansion of Open Schooling in these areas and fulfill the educational demands of society.

Further, studies on vocational courses are underway in the area of factors affecting enrolment trend in selected vocational courses in NIOS; study to assess the nature, characteristics of vocational learners and their reasons for choosing open and distance learning from selected regional centres of NIOS. Outcome of these research studies will be helpful for NIOS to understand vocational needs of the learners.

2. ***Courses of Study***

NIOS offers 28 subjects in eight mediums (Hindi, English, Urdu, Marathi, Telugu, Gujarati, Malayalam, Tamil and Odia) for Secondary Examinations and 25 subjects in Hindi, English and Urdu mediums for Senior Secondary Examinations.

It also offers Open Basic Education (OBE) programme at three levels A, B and C for the children upto 14 years. Acknowledging the fact that the young entrepreneurs will be the wealth of the nation, NIOS offers over 100 learner friendly vocational courses in different arenas.

Research studies and surveys on identification of academic and vocational education courses keeping in view the needs of various target groups, including deprived sections of the society. Development of course materials, especially with ICT application, and assessing their efficacy through experimental and follow up studies and also experimentation on making learning package more self instructional with and without practical components. Rational evaluation and empirical evaluation of Self Learning Materials (SLM) with the help of tools for evaluation of Self Learning Materials are being taken up for research to strengthen existing system.

Gulati (2015) in examined efficacy of the life skills integrated self learning material in Home Science on the skill development of NIOS learner and also its contribution towards various dimensions of life and personal development. Findings of the study revealed that the life skill integrated study material carries a potential to bring substantial improvement in life skill development of its stakeholders by reflecting its positive impact on many life skills and also positive approach among learners towards NIOS.

Studies shows Self Learning Materials (SLM) have been well designed and it has been of great help to learners. Though, NIOS continuously revise its materials and curriculum as per policy laid down in National Curriculum Framework (NCF), still more research is required in this area. Life skills which has been webbed and incorporated to few courses at secondary level contributed towards various dimensions of life and personal development may be taken further to senior secondary level.

Keeping these findings in mind a study has been initiated by NIOS to study the learners' feedback on identification of difficult areas in Hindi literature at senior secondary level and evaluation of Self Learning Material (SLM) of Mathematics at senior secondary level. Findings of these studies will help NIOS to further enhance the standards of learning material.

3. ***ICT and Media Research***

Audio-visual aids have always been of great importance in teaching and learning process. It is more effective when it is being used in open and distant mode where learner can directly have the access without going to formal classroom. One of the major activities of the NIOS is to make use of modern means of communication and Educational Technology in distance Education. Audio and video programmes are significant components of the multi-media packages offered by NIOS for its various courses of study. The audio/video programmes supplement and complement the other modes of learning such as printed self learning materials and personal contact programmes. Beside audio and video programmes Mukta Vidya Vani a web radio programme is also being used as means of communication for learners.

Prasad (2015) found positive learning of utilization of NIOS audio-video programmes in a telecast/record cast as well as non-broadcast mode. Study further revealed that telecast technology and equipments available in the NIOS for the production of audio-video programmes such as High Definition / Standard Definition Studios and non linear editing, are sufficient enough to meet the challenges of improving the quality of education for the open and distance learners by supplementing and complementing the media programmes with the study material.

Finding of the studies on delivery system, use of ICT and different modes of providing instruction with multi-media which is being used have shown positive impact on learners. It has helped NIOS to develop learner centered audio and video programmes. But, at same time NIOS has initiated research in this area to find more new methods to reach its learners.

NIOS has initiated studies on effectiveness of live Mukta Vidya Vani, Massive Online Open Course and Virtual Open Schooling which will help to strengthen its communication with learners.

4. *Teaching and Learning Strategies*

In open and distance mode teaching and learning strategies plays a pivotal role. Learner has to learn through Self Learning Material (SLM) only. Learner has to understand and comprehend from the provided material. Studies on instructional methods suitable for Open and Distance Learning (ODL), support systems needed to enhance learning and procedures of continuous evaluation to be adopted for monitoring the progress of learners and also for helping them in learning more effectively have also been conducted in the NIOS.

Rai and Punia (2013) got the feedback on the quality and usefulness of Tutor Marked Assignments (TMAs) from the learners. Major findings revealed that learners did not receive booklet of assignments along with study materials on time. There was lack of motivation among learners as no comment was received from the tutors. As there was and no compulsion of submitting TMAs, its effectiveness hence deteriorated.

Sodhi (2014) facilitated the NIOS to identify the skill gaps and recommended learning support for certification of skills in the select trades of priority sector in India i.e. Auto Mechanic (Automobile/Auto Component), Mason (Building & Construction), Carpenter (Building & Construction), Plumber (Unorganized Sector) and TV Repair (Electronics Hardware).

Findings show gaps in certain vocational courses and also inability to get materials and assignments on time by learners. Based on the findings, NIOS has now uploaded study materials along with assignments on website. Further, more research is being initiated to improve teaching and learning process for the learners.

Ongoing research like effect of 2D and 3D virtual instructional module on the intellectually challenged secondary students of NIOS, findings of this study will definitely help special and intellectually challenged children.

5. *Student Support Services*

Problems of learners have always been a concern in open and distance education. Though, little research work has been done in this area Augmentation and strengthening of student support services, improvements in the delivery system, decentralization of administration and extensive use of communication systems are being studied using the experimental and the case study approaches.

Findings of studies helped NIOS to develop online portal for student grievances and extended facilities through mobile. Further, NIOS is taking up more initiatives and research to equip learners for best student support services.

Other ongoing research in the area of providing quality education by open schooling to marginalized section of society will help NIOS to understand their clientele group and their educational needs.

6. ***Evaluation of Learners***

Evaluation of any programme is important. Evaluative studies pertaining to organization, methods, procedures and results in terms of the learning outcomes of distance learners, and the impact of distance/open education on the socio-economic development of various target groups deserve special attention for planning and policymaking need to be studied.

Studies that compare the performance of pass outs of ODL system with those of formal school system on certain indicators will help in establishing the credibility of the ODL system and also in providing feedback in areas in which improvement is needed is required to be studied.

Studies based on analysis of examinations data to assess the quality of questions and to analyze the performance of examinees on different competencies tested by the questions, studies on socio-economic background of learners and analysis of the examination results of different socio-economic groups, caste groups and other disadvantaged groups are being taken up for the study.

Prasad (2011) found that there was lot of difference in marks obtained by learners, when their answer scripts were rechecked. Paper was not designed according to blue print and copies were not checked according to marking scheme.

Studies shows difference in numbers when same answer script was checked by different examiners. Results of study were followed by a comprehensive programme for the training of its paper setters in the concept and techniques of evaluation and particularly in reference to preparation of balanced question papers. NIOS is looking forward to do pilot project in computer based marking to reduce error pertaining to evaluation.

Other researches in the area of evaluation of learners, impact of NIOS programme are *currently under progress*. Outcome of the study will be helpful to substantiate demand for expansion of Open Schooling in this area and fulfill the educational demands of learners in this region.

7. ***Cost Effectiveness of ODL System***

Financial growth and stability is required for any institution to sustain. Being autonomous organization NIOS survives on its own resources, generated through fees collected from students. Though, few researches have been done in this area. Research studies on per student cost and cost-effectiveness of the ODL system for different types of courses are being taken up for the study.

Gaba (1999) in his study pertaining to cost analysis of open schooling highlighted some suggestions regarding measures to be taken related to financial management to reduce the cost in open schooling.

NIOS is trying hard to give best from its available resources and initiating more research on better financial management. NIOS is looking ahead to do more research in cost effectiveness and financial management.

8. ***Tracer Studies and Other Studies***

Tracer and other follow up studies to find out how the pass outs are employed and, in general, what they are doing and what their views are about the courses completed by them are being taken up for the study to know passed out learners.

Chugh (2012) identified the educational status of learners and found the cause of dropouts like poverty, family hindrances, early marriage and failures before taking admission in NIOS courses. Study also revealed positive perception of learners about their learning experiences in NIOS courses.

Sahoo (2015) explored where about the products of NIOS, their experiences of open schooling and its contribution towards various dimensions of life and personal development. Findings of the study revealed positive approach among students towards NIOS. Learners were benefitted in getting academic and professional qualification to get suitable jobs. Learners who could not avail formal education could able to complete their higher studies and achieve better in life.

Finding of above studies have shown that learners who passed out from NIOS are well settled and feel proud of their education which they got from NIOS. More such tracer studies, which NIOS has initiated, especially in remote areas will help to know about their learners and their where about. It will also help NIOS to trace and project them for their budding and future learners.

Other ongoing research in the area of assessment and the impact of skill training on the girls of Kasturba Gandhi Balika Vidyalaya (KGBV), to whom vocational training has been given by NIOS, will be helpful to know the impact of skill training on these girls.

Challenges

However, despite of past success in increasing access and being a leader in open schooling in the world, the future holds many challenges at all stages of educational development and priority area of research as numbers of children not attending school at all is likely to increase. Pace of enrolment needs to be accelerated keeping in mind needs and demands of learners. High quality of research into open schooling will be a challenge to meet requirement of the educational needs of the society. “Another challenge arises from the need to retrain people for employment and at home in “a fast socio technological scene”. (Mukhopadhyay, 1994)

Many studies have been done since its inception in last three decades. Still, many priorities areas like cost effectiveness, financial management, organizational structure, policy, planning and management, human resource development and inclusive education are being left wide open for research to strengthen existing system of NIOS. To move with the pace of technology, it is a challenge for NIOS to do more prolific research in media and ICT which is now backbone of open and distance education. Besides, proper and timely implementation of research findings, difficulty in data collection, collaboration with state open schools for further educational research and innovations, disseminating research findings through seminars, workshops and journals at national and international level and comparative studies among the open school countries in collaboration with agencies like COMOSA etc. are few challenges which NIOS is facing right now.

Conclusion

At NIOS, research has been encouraged since early times and has been accorded due priority in its programmes. The research guidelines are carefully drafted and laid out- facilitating research by its own faculty as well as by other agencies. Research at NIOS provides feedback on the concerns of expansion of its operations and learners base; providing access to quality education; ensuring excellence in its learning materials and support services, and imparting employability to its learners. Numerous research studies have been undertaken and the research findings have been constructively used to re-engineer the processes. Technology has been harnessed in a big way to devise solutions to problems thrown up by the research. Impact assessment studies of the use of new technology like the interactive web radio, offering open online course, etc. are underway.

It is now time to increase the scale on which research activities are planned and carried out. NIOS needs to collaborate with agencies/institutions that can develop and execute pan India research on open schooling such as impact of open schooling in reaching the unreached in the country; to determine strategies to impart vocational training to the youth to develop a skilled workforce; as well as suggest strategies to engage those who are geographically distanced, have special needs or face other disparities.

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EXPOSING GIST OF EFFECTUAL ONLINE TUTORIAL SUPPORT

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Abstract

Traits related to effectiveness of online tutoring programs provided by Universitas Terbuka Indonesia were investigated. It was mainly aimed at expounding factors contributing to effective online tutorial support viewed by students. It was also of interests to perceive on how those factors were interrelated one to another and in what routines. The inquiry was conducted using Mixed-Methods (Exploratory-Design). It was learned that five variables involved in this framework qualitatively. Quantitatively, they were modelled as: effective online tutorial support (dependent variable), tutor learning strategy (moderating variable); perception of technology, rational for using Internet, and perception of media support (independent variables). Instruments in the form of list of questions for in-depth interviews/focus group discussions for selected respondents were chosen purposively; plus questionnaires were developed for quantitative purpose in accordance with the five variables identified. Questionnaires consisted of 20 dimensions (4-dimension/variable and 3-question/dimension). Instruments comprehensively consisted of 60 statements; Likert Scale, 1-5. Population was 1,814 Indonesian students registered in the first semester of 2015 (2015.1) resided overseas. Respondents were chosen proportionally by distributing 350 questionnaires; 199 were finally completed. Ten hypotheses were scrutinized under structural equation model (SEM). Statistically, six were validated by the analysis. It was significantly discovered that the main variable affecting effective online tutorial support was simply tutor learning strategy. Beside, tutor learning strategy was positively influenced by perception of technology, followed by rational for using Internet; excluding perception of media. Rational for using Internet was influenced by perception of media support and perception of technology. Perception of media support was influenced by perception of technology. Prominent dimension in effective online tutorial was contribution aspect. Remarkable dimension in tutor learning strategy was style of tutor. Notable dimension in perception of technology was promptness of service. Considerable dimension in rational using Internet was access. Remarkably, the quantitative results imperfectly verified the qualitative upshots.

Keywords: *Online tutorial, tutor learning strategy, Exploratory-Design, SEM*

Introduction

Global stream of online learning and their advantages in depth and suggestive as a result of how Internet technologies integrate well with open and distance learning (ODL) are extensively explored within this two decades. With exponential advancement in information and communication technology (ICT), online tutorial has become progressively well-liked approach for distance learners (Zang *et al*, 2005). This represents various prospects for the continued progression of ODL by providing current-prospective students with larger flexibility/prospect obtaining quality education (Devine & Lokuge, 2012). Integration of Internet technologies potentially enhance student connectivity and strengthen learning environment with the emerging accepted technologies and tutors contributions (Susilo, 2014; Price *et al*, 2007).

Up to mid 1990's, including in Indonesia, isolation has been revealed as common problem and it is ordinarily noticed as driving force of student dropout/attrition (Bean, 1985; Tinto, 1993; Sembiring, 2013). By fastidious considerations, approaching end 1990's, Universitas Terbuka familiarized online tutorial to mend gaps in accessing/acquiring information, services, and academic supplies. The University has endorsed prominent roles within the country and in neighbouring regions by offering 179 courses by online regularities as the beginning of real online learning. Since then, 1,021 courses in first semester 2014 (2014.1) and 1,044 courses in second semester 2014 (2014.2) successively, which account of plausible courses offered, have been switched into totally/partly amalgamated into online modes (Universitas Terbuka, 2013 & 2015b). These numbers are harmoniously accomplished in relation to what was initially quantified in the University's plans (Universitas Terbuka, 2015a).

Student body in 2014 was totalled to 333.501. Given those facts, it is more likely number of students participating would hypothetically be more than a million student-course. This comes from middling calculation of student takes 3-courses/semester. In accomplishment however, only 222,905 student-course (2014.1) and 226,470 (2014.2) were participated (Universitas Terbuka, 2015b). Nonetheless, final grade was contributed up to 30% from tutorial results. Participation rate was reasonably low.

It is then appropriate to anticipate how online tutorial did support flexible/rich learning environment to deliver high quality/cost-effectiveness ODL through Universitas Terbuka. Additionally, there is limited revelation how to create/upgrade tutorial supports utilizing online technologies so the supports are entirely efectual, accessible, and beneficial. The study was then aimed at explicating variables and dimensions engaged and contributing to the effectiveness of online tutoring systems. It was also of interests to distinguish how those factors were interrelated one another and in what behaviors. Investigation is guesstimated utilizing Exploratory-Design.

Related Literatures Review

Value of long-established traditional teaching schemes has been challenged ever since more educationalists searching for alternate approaches of presenting materials, engaging more students, and concurrently increasing academic achievement. As an effect, use of computers/Internet has become integral part of learning. This prologue is summarized by Guy & Lownes-Jackson (2012); they have facilitated growth of online tutorials for student learning across branches of disciplines. Refer to the objectives, effective tutorial is determined by various factors. Qualitatively, it was limited to 4-factor, partially/comparatively inspired by Zhang *et al* (2005), Rossel-Aguilar (2007), Shin & Kang (2015), and Mbatha (2015). They are: perception of technology, rational for using Internet, perception of media support, and tutor learning strategy.

Effective online tutorial is referred to as having well-structured design (Mitchel, 2005), interactive (MacKinnon & Williams, 2006), quick-response (Varnhagen & Digdon, 2002), and contributive to final grade (Wilson & Harris, 2002). Perception of technology is denoted of possessing comfortable procedure (Sweeny *et al*, 2004), promptness (Lee *et al*, 2010), accuracy (Koch & Gobel, 1999), and embeded-traceability traits (Bliwise, 2005).

Rational for using Internet is described as retaining efficiency (Bolliger & Supanakorn, 2011), access (Jain, 2006), communication (Elicker *et al*, 2008), and simplicity (Osborn, 2010). Perception of media is expressed as preserving aspects on availability and friendliness (MacKinnon & Williams, 2006), integration (Lenz, 2010), and connectedness (Talmadge & Chitester, 2010). Tutor learning strategy is extracted to conserving discussion (Dawson, 1998), group-work (Cheng & Swanson, 2010), style (Benham, 2002; Keefe, 1979), and referral-source (Talmadge & Chitester, 2010) for rendering students enjoyed online sessions.

Having acknowledged/amalgamated results as follow up of interviews/focus group discussions and related to literatures review accomplished previously (qualitative process), it comes to rectify them. They are systematized in Table 1 to ease establishment of the framework. It is a basis of establishing operational framework (quantitative routines) implemented afterwards.

Table 1: Variables and Dimensions

No	Variables	Dimensions	No	Variables	Dimensions	Notes
1	Effective online tutorial Y	Y ₁ : Well-structured Y ₂ : Interactivity Y ₃ : Responsiveness Y ₄ : Contributive	2	Perception of technology X₁	X ₁₁ : Comforts X ₁₂ : Promptness X ₁₃ : Accuracy X ₁₄ : Traceability	Each dimension is measured by 3-item. 12-question for each variable. Total questions: 60
3	Rational for using Internet X₂	X ₂₁ : Efficiency X ₂₂ : Access X ₂₃ : Communicative X ₂₄ : Simplicity	4	Perception of media support X₃	X ₃₁ : Availability X ₃₂ : Friendly X ₃₃ : Integrated X ₃₄ : Connected	
5	Learning strategy of tutor X₄	X ₄₁ : Discussion X ₄₂ : Group work X ₄₃ : Style X ₄₄ : Referral-source				

Refer to Table 1, the model is established; investigated under quantitative procedures (Figure 1).

Methodology and Hypotheses

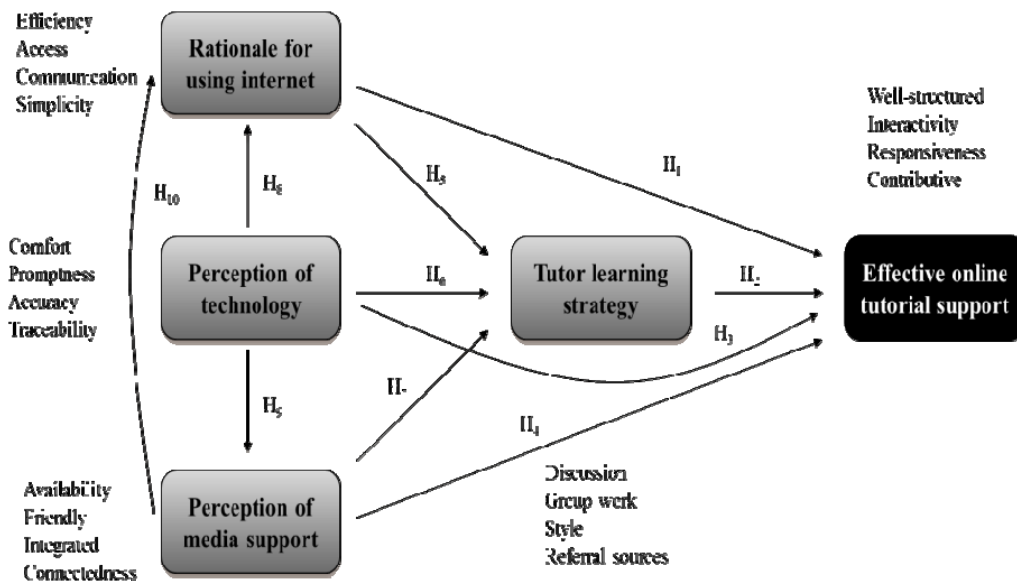


Figure 1: Operational framework

This study is conducted under Mixed-Methods, Exploratory-Design (Creswell & Clark, 2011). It is predetermined instigated using qualitative procedure first, pursued by quantitative series. Two instruments are prepared; list of systematic questions for in-depth interviews/focus group discussions and instrument/questionnaire for quantitative purpose. Table 1 and Figure 1 authorized highlights of 4-variable influencing effective online tutorial as dependent variable (Y). They are: perception of technology (X₁), rational using internet (X₂), perception of media (X₃), and tutor learning strategy (X₄). X₁, X₂, X₃: independent variables; X₄: moderating variable.

Instrument consisted of 60-question; Likert Scale 1-5 related to all variables engaged. Each variable has 4-dimension and each dimension is measured by 3-question. This approach quantitatively addresses conceptual framework in operational level to better organize the framework/design, hypotheses, survey/sampling techniques, data collection-analysis, and drawing conclusion.

Variables are explored through questionnaires (Tjiptono & Chandra, 2011); 350 questionnaires were distributed. Survey is started to assemble data (Fowler, 2014). Purposive sampling for qualitative procedure was chosen to select eligible respondents; proportionate sampling for quantitative purpose (Cochran, 1977; Sugijono, 2012). SEM (Wijayanto, 2008) is utilized to detect pattern and power of relations among variables involved from 199 completed questionnaires.

The study scrutinizes ten hypotheses (Figure 1). They are: effective online tutorial is influenced by rational using Internet (H_1), tutor learning strategy (H_2), perception of technology (H_3), and perception of media support (H_4). Beside, tutor learning strategy is influenced by rational using Internet (H_5), perception of technology (H_6), and perception of media (H_7). Perception of technology influences rational using Internet (H_8) and perception of media (H_9). Rational using Internet is influenced by perception of media (H_{10}).

Results and Discussions

Before presenting results, it is better to show characteristics of respondents (Table 2). This will amplify insights related to qualitative-quantitative procedures utilized sequentially. The analysis and interpretation are detailed in related table/figure.

Tabel 2: Respondents Characteristics

Number of Countries (Students Domicile) = 27		Population = 1,814		Questionnaires Completed (Respondents)		350 199
		%			%	%
Student Domicile	Hong Kong	24.12	Taiwan	19.09	South Korea	15.07
	Malaysia	18.59	Singapore	13.56	Others	9.54
Study Program	Communication	23.11	Management	18.09	English	46.73
	Business Admin	4.52	Accountancy	4.52	Others	3.01
Professions	Public Service	0.00	Private Sector	40.20	Industry	22.11
	Own Business	5.22	Non-Formal	29.14	Others	3.01
GPA (2014)	0.00-1.49	3.01	1.50-1.99	22.61	2.00-2.49	39.69
	2.50-2.99	19.59	3.00-3.49	14.07	3.50-4.00	1.00
Age (Year)	18-25	34.17	26-30	31.15	31-35	26.63
	36-40	7.03	41-45	0.50	46 ⁺	0.50

Figure 2 exposed four hypotheses are not validated by the analysis. They are: $H_1 = 0.34$ (rational using Internet-effective online tutorial), $H_3 = -0.01$ (perception of technology-effective online tutorial), $H_4 = -0.34$ (perception of media-effective tutorial), and $H_6 = 1.88$ (perception of media-effective tutorial); as $t_{\text{values}} \leq 1.96$ ($\alpha = 5\%$). This implies that statistically effective online tutorial was not positively/directly influenced by rational using Internet, perception of technology, and perception of

media. It is worth to note differences between qualitative-quantitative results did take place. We see later whether gaps are in highly contradictory intense (conceptual/operational and/or main-variable level) or partly in lower level of meanings.

Other six hypotheses are positively/directly confirmed by the analysis. They are: $H_2 = 4.46$ (tutor strategy-effective tutorial), $H_5 = 3.04$ (rational using Internet-tutor strategy), $H_6 = 4.52$ (perception of technology-tutor strategy), $H_8 = 2.11$ (perception of technology-rationale using Internet), $H_9 = 8.03$ (perception of technology-perception of media), and $H_{10} = 5.69$ (perception of media-rationale using Internet); as $t_{\text{values}} \geq 1.96$ ($\alpha = 5\%$). This entails effective online tutorial is significantly influenced by tutor learning strategy. Beside, tutor strategy is influenced by rational using Internet and perception of technology. Perception of technology influenced both rational using Internet and perception of media; perception of media influenced rational using Internet.

Having confirmed hypotheses, we are in position of relating the loading factors to discern power of correlations each variable and its comportment. It is done under SEM in the frame of factors affecting online tutorial to work out the results; following Wijayanto (2008) and Hair *et al* (2009). Focus on Figure 2: 5-principal is necessary to be elaborated to conclude the ends.

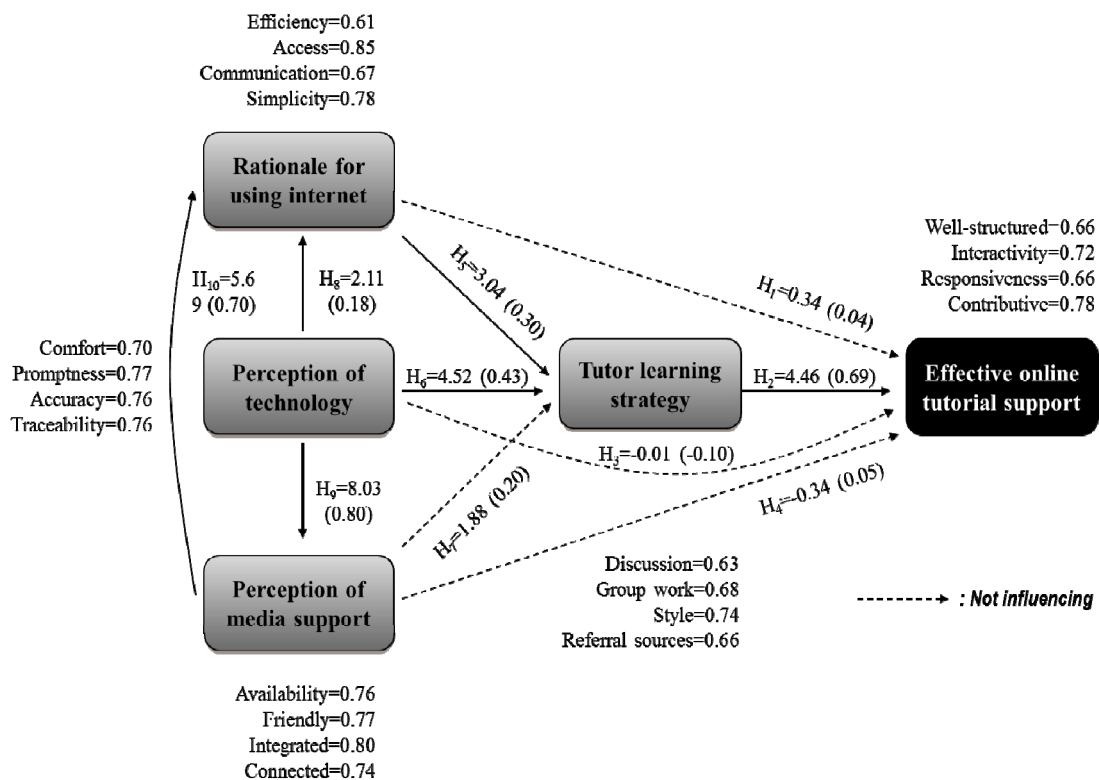


Figure 2: Results of hypotheses and loading factors

The *first* is related to influential factor to effective online tutorial. Analysis confirmed tutor strategy (X_4 to $Y = 0.69$) is the only main variable affecting effectiveness of tutoring scheme; while others are not. This means respondents considered strategy of tutor on how they managed activities in each session was a big deal. This implies effective tutorial was forced by ‘outside’ of students. For, rational using Internet, perception of technology, and perception of media are students’ intrinsic attitudes.

Dimensions within tutor strategy placed style ($X_{43} = 0.74$) as the highest (controlling tutor strategy). This is consistent with result obtained from qualitative inquiry. Other three dimensions orderly are: group-work ($X_{42} = 0.68$), referral-source ($X_{44} = 0.66$), and discussion ($X_{41} = 0.63$). These results implied respondents believed tutor strategy (style), was able to motivate student to be more involved in group-work, search for academic sources, induce discussion themselves. Reasonably, these are also general impressions from qualitative inquiry.

The *second* is on factors affecting tutorial strategy. Conceptually, it was influenced by perception of technology, rational using Internet, and perception of media. Having analyzed, perception of media however had no effect on tutor strategy. It was influenced by perception of technology ($X_1 = 0.43$) and rational using Internet ($X_2 = 0.30$). This means perception of technology had more effects than rational using Internet related to tutor strategy. Students positioned perception on thechnology is more likely influenced online tutorial directly/indirectly as compared to rational using Internet.

Selected respondents agreed on quantitative effects in variable level and ranks of dimensions. Respondents concurred that having good technology perception will help them to get hold promptness ($X_{12} = 0.77$), accuracy = traceability ($X_{13} = X_{14} = 0.76$), and comfortable ($X_{11} = 0.70$) related to chance of obtaining effective-contributive tutorial ($Y_4 = 0.78$). Moreover, respondents viewed access ($X_{22} = 0.85$) as the determinant of rational using Internet; followed by simplicity ($X_{24} = 0.78$), communication ($X_{23} = 0.67$), and efficiency ($X_{21} = 0.61$).

The *third* consequence, perception of technology affected rational using Internet ($X_2 = 0.18$) and perception of media ($X_3 = 0.80$). This output shows perception of media was much more affected by perception of technology rather than that of rational using Internet. Most respondents learned to get advantages of effective/contributive tutorials are more likely achieved by having good perception of media rather than rational using Internet; and it is true in most cases.

Given that ICT were characterized by integration ($X_{33} = 0.80$), friendliness ($X_{32} = 0.77$), availability ($X_{31} = 0.76$), and connectedness ($X_{34} = 0.74$) students would be more entertained by online tutorial. It is more critical to possess perception of media rather than that of rational using Internet. Factually, rational using internet had no effect on tutorial. Despite interrelation was so, it is worth to reveal the ranks: access ($X_{21} = 0.85$), simplicity ($X_{24} = 0.78$), communication ($X_{23} = 0.67$), efficiency ($X_{21} = 0.61$).

The *fourth* is relation between media perception and rational using Internet. Statistically, it is influenced by perception of media (0.70). Surprisingly, both have no effect to dependent variable. Theoretically, at least online tutorial is influenced by perception of media. It seems further prudent inquiry is necessary to envisage how it goes so.

The *fifth* is on the gaps between qualitative-quantitative results. Initially, it was established 4-variable associated with effective online tutorial. Based on those, conceptual framework was developed to be validated quantitatively. Ten hypotheses was scrutinized and four are not validated statistically. This implies quantitative result was not comparatively harmonious with the qualitative ends.

Having perceived quantitative-qualitative series, results were distinct and somewhat contradict. Are they so? Effective tutorial was not directly influenced by independent variables. Under quantitative routines, there are three motives why they were so. The first is elaboration of dimension. The second is dimension transformation into attributes in constructing questionnaires. The third is data collection processes; further inquest (quantitative) is crucial by noticing those aspects explained. However, it is still partly useful (tutor strategy is a hint to effective tutorial). From qualitative procedure, effective online tutorial can be firmly disclosed (as summarized in Table 1).

Prior to justifying closing line, it is reasonable to think over whether SEM output is in 'good-fit' category. If so, it is dependable to consider hypotheses and the loading factors to confirm the power of interrelations. Analysis confirmed they are *not* all good-fit (Table 3).

Tabel 3: Goodness of Fit

Goodness of Fit	Cut-off Value	Results	Notes
RMSEA – Root-Mean-Square Error Approximation	≤ 0.08	0.088	Marginal-Fit
RMSR – Root-Mean-Square Residual	< 0.05 or < 0.10	0.100	Marginal-Fit
GFI – Goodness-Fit Index	≥ 0.90	0.580	Poor-Fit
AGFI – Adjusted Goodness-Fit Index	≥ 0.90	0.540	Poor-Fit
CFI – Comparative-Fit Index	≥ 0.90	0.960	Good-Fit
NFI – Normal-Fit Index	≥ 0.95	0.930	Marginal-Fit
RFI – Relatif-Fit Index	≥ 0.90	0.930	Good-Fit

This implies quantitative framework validated is defectively dependable. Conceptual/operational model may have substantial/technical differences in theoretical/methodological intensity refer to qualitative-quantitative results. Need specific elaborated discussions on this ‘different’ outcomes.

Despite they are not all good-fit, it is helpful using them as point of reference between qualitative-quantitative endings. Three underlying evaluations needed to be opened up to make use of corollaries. The first consequence is dispute on difference result using Exploratory-Design. The second is reason adjacent to respondents characteristics. The third is implication of findings for future consideration supposedly conducting further comparable inquest.

After completing procedures, tutor strategy is mutually supporting with rational using Internet and perception of technology along with the dimesions (as two independent variables). Likewise, moderating variable interconnected with independent variable. Remarkably, despite perception of technology has no effect on online tutorial, it has effect on dependent, mediated by moderating variable. Fortunately, independent variables are interrelated one another with significant power. This implies qualitative-quantitative results are considerably varies; it is providential not absolutely contradict each other.

Exploratory-Design was conducted by collecting-analyzing data qualitatively first, then built quantitative structure prior to interpretation (Creswell & Clark, 2011). It aims at measuring qualitative exploratory findings. Prior to building operational framework (quantitative procedure), conceptual framework (qualitative outcomes) should be first established as the model is statistically scrutinized afterwards. Therefore, connecting 2-strand related to theoretical/instrumental elaboration become crucial details. In fact, end results show four hypotheses are not accomplished cordially. Beside, order of dimensions are partly disharmony either. Quantitative approach is still unable to prove qualitative exploratory findings perfectly.

Referring to Table 2, it can be enlightened respondents are highly literarte in ICT; they live overseas and they are working community. This explains why most respondents did not regard ICT-wise aspects, the soul of independent variables, as a chief clue leading to effective online tutorial. What is critical to them is how tutor managed tutorial activities.

Anticipating corresponding research for further judgement is prominent. Magnitude of respondents is not only restricted to overseas but also by welcoming domestic students. Having involved them, it will enlarge effects obtained related to frameworks resulted from qualitative inquiry; to find the determinants of effective online tutorial. Sensible insight is required to be identified to avoid restraint retrieving harmony between qualitative-quantitative effect. Above all, adopting dependable method is urgent to define those determinants both under qualitative-quantitative approaches.

Concluding Remarks

Result encountered is considerable contrast (qualitative routines versus quantitative). Four hypotheses assessed are not validated by the analysis. Established qualitative framework is imperfectly approved by quantitative analysis. Yet, they *only* differ – not necessarily contradicting in high influence. The result is therefore still useful for the University to re-prioritize critical dimensions that should be carefully taken into account to provide effective online tutorial with students' needs accordingly.

Most respondents classified tutor strategy in the first spot as a tip-off. The University should take this upshot by spotting imaginable constraints that might be real (to motivate students being more active in group-work/discussions) via accepted style. Universitas Terbuka is well-advised to get ahead on the dimensions in this variable so that tutors have the same views. Imagining this savvy is unanimously typical in a wide-ranging of ODL settings, then management and tutors would be well-advocated to ponder all variables engaged along with their associated dimensions/attributes. It aims at offering beliefs that tutor strategy grows to endeavor great online tutoring scheme as expected by students.

Although online tutoring idea is prodigious in ODL ambiance, for its flexibility/convenience, it is important to address issues that adversely impacting on retention/attrition issues. Further comprehensive inquest should be aggressively organized in terms of instructional design necessity and learning styles endorsement relative to the virtuous of online tutoring structure in a broader sense.

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MAJOR ATTRIBUTES UNDERWRITING INTEGRATION OF OER INTO ONLINE TUTORIAL SERVICE

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Abstract

Primary highlights relatable to the success of integrating open educational resources (OER) into online tutorial supports were explored in this inquest. It was mainly expected to explicate issues on OER amalgamation into online tutorial service effectively. In addition, it was of importance distinguishing on how those factors were interrelated one another and in what behaviors. The enquiry was performed by means of Mixed-Methods, i.e., Explanatory Design. Quantitatively, it was determined five foremost variables involved in this structure. They were constructed as: success factor of integrating OER into online tutorial support (dependent variable), institutional factor (moderating variable); pedagogical, social, and attitudinal factors (independent variables). Instruments both in the structure of questionnaires (quantitative purpose) and the list of systematic queries (qualitative purpose) were developed with respect to the five variables knotted. Questionnaires comprised 25 dimensions, 5-dimension for each variable; each dimension contains 2-question. The questionnaires entailed 50 queries in total with Likert Scale, 1-5. The population was all 721 Universitas Terbuka academic staff. The respondents were selected using simple random sampling technique. Three hundred fifty questionnaires were dispensed and 254 finally accomplished. Ten hypotheses were engendered and then examined employing structural equation model (SEM). Statistically, nine of them were substantiated by the assessment. It was revealed that the main variable influencing success factor of integrating OER into online tutorial service was institutional factor; then followed by pedagogical and attitudinal factors respectively. Besides, institutional factor was orderly influenced by pedagogical, social, and attitudinal factors. Pedagogical factor affected both attitudinal and social factors. Unenviably, social factor did not affect the dependent variable. Qualitatively, however, it was conclusively found that the success of integrating OER into online tutorial service was not only affected by the three main variables found quantitatively but also enormously influenced by social factor perceived by chosen respondents selected purposively with particular instrument.

Keywords: OER, online tutorial, institutional, pedagogical, attitudinal, Explanatory-Design

Rationale

Open educational resources (OER) are understood as sustainable way forward reaching education for all. Developing countries can benefit owing to OER from developed countries (Kawachi, 2013); including Indonesia through Universitas Terbuka. OER means small self-contained entity of self-assessable teaching with quantifiable learning objective; often in digital electronic arrangement. They are generally open and free to use either. Correspondingly, given adjustment to higher education environment and the rising prospects posed by socially disruptive powers of information and communication technology (ICT), universities can no longer prolong running services as normal situation. They have already recognized this transformed reality by adopting business style involves active transformation of processes, operations, and systems. Then, institutions experimenting with OER and massive open online courses (MOOCs) for instance are now making many courses freely available (de Hart, 2014). For the proliferation of open content online is accelerating globally, content delivery is no longer sufficiently compelling value proposition in higher education ambience.

Concurrently, the large-scale stream of online learning and their advantages due to how Internet technologies incorporated well with open and distance learning (ODL) are extensively explored in the last ten years. Exponential progress in ICT, online tutorial support has become increasingly well-adored style for ODL students (Zang *et al*, 2005). This signifies various prospects for continued progression of ODL by providing current and prospective students with a greater flexibility to acquire high quality education (Devine & Lokuge, 2012). Internet technologies amalgamation enhance student connectivity in ODL and strengthen learning atmosphere with emerging accepted technologies and tutors involvement (Susilo, 2014; Price *et al*, 2007).

Up to mid 1990's, including in Universitas Terbuka, student segregation has been publicized as normal problem and customarily perceived as force of student attrition; issues related on persistence/retention (Bean, 1985; Tinto, 1993; Sawitri & Sembiring, 2013). By careful notion, entering late 1990's, Universitas Terbuka accustomed online tutorial services to wittingly bridge gaps in acquiring academic supplies. Universitas Terbuka has ratified exceptional functions in the country and even in neighbouring regions by offering 179 courses by online tutoring model, non-OER yet, as a beginning of actual online learning. Since then, 1,030 courses (2014) have been altered totally-partially blended into online courses (Universitas Terbuka, 2015b). These numbers are harmoniously accomplished with respect to what was firstly quantified in the University plans (Universitas Terbuka, 2015a).

In an effort of widening OER, "Sumber Pembelajaran Terbuka (SUAKA UT)", dedicated portal for anyone acquiring OER without restraints, was established, <http://www.ut.ac.id/OER> (Universitas Terbuka, 2013). The portal has features to access OER-content: internet television (ITV), web supplement, "guru pintar online" (GPO; dedicated portal for teachers), and digital library (Diglib). Here, they are offered in separate entity. They are not merged in the sense of integrating supports contained OER thoroughly. Nonetheless, University plans to have 50% courses offered in the form of integrated multimedia learning materials (IMLM, containing blended OER) by 2015; 75% by 2016; and 100% by 2017 (Universitas Terbuka 2015a).

To illustrate (in 2014), student body was totalled to 333.501. Record shows entrees to ITV = 52,822; web supplement = 778,398; GPO = 436,023; and Diglib = 4,636,545. In addition, number of IMLM was less than 50% in 2015 (Universitas Terbuka, 2015b). Given those records, there are issues classified twofold: number of IMLM produced is lower than that it was planned; and participation rate of entrees to <http://www.ut.ac.id/OER> is reasonably low. It was nevertheless believed role of portal was strongly significant to enhance student performance.

It is then crucial to anticipate how OER can be integrated into online tutorial and did encourage an amenable and vivid learning atmosphere for superior quality/cost-effective ODL operations through Universitas Terbuka. The inquest was therefore mainly aimed at elucidating issues on unification of OER into online tutorial service beneficially. Beside, it was of importance to classify how those factors were interrelated and in what behaviors.

Related Literatures

Online learning is fastest growing trends in education uses of technology. Students in online learning performed modestly better than those receiving face-to-face instruction. The advantage over the classes was significant contrasting blended learning with traditional instruction but not contrasting purely online with face-to-face conditions. Studies using blended learning tended to involve additional learning time, instructional resources, and course elements encourage interactions among students (Means *et al*, 2013). Online learning has become popular because of its potential for delivering more flexible access to content and instruction at anytime, from anyplace, by anyone. The motivation for online programs often entails: increasing availability of learning experiences for learners who cannot choose/attend classes, assembling and disseminating instructional content in more efficient cost, and/or providing access to qualified resources to students in places where such experts are unavailable. Online learning advocates argue additional reasons for embracing this mode includes

current technology's support of interactivity degree, social networking, collaboration, and reflection that enhance learning relative to normal classroom ambiance (Rudestam & Schoenholtz-Read, 2010).

Twin concepts of sharing and reuse underpin OER are not new. Masterman *et al* (2011) summarized by describing OER can be viewed as latest in number of initiative to encourage good pedagogic practice, including reuse of resources. OER can also be compared with learning objects, noting similarities in challenges to widescale-use (accessibility, discoverability, granularity, reusability) and differences. Presence of online learning (primarily online tutoring scheme) and OER remarkably phenomenal in the last decade.

Inspired by Atkins *et al* (2007), OER integration within online tutoring configuration can be broadly described as teaching/learning resources/properties reside in public domain or have been published under intellectual property license that allows their free use/re-purposing by others. They include full courses, course materials, modules, textbooks, audio/video streaming, evaluation, software, and any other tools/techniques used to preservation access to knowledge.

Universitas Terbuka is also influenced to integrate OER by incorporating them into online tutorial service. It is believed that by integrating OER will bridge students to muddle through subjects they undertake successfully. Starting last five years, OER in Universitas Terbuka milieu become gradually integral part of services through ICT-based modes. Factors integrating OER into online tutorial positively are getting more urgent ever since.

Numerous factors can be identified related to issues of integrating OER into online tutorial. Those factors, inspired by Nagashima (2014), can be validated from institutional, pedagogical, and social aspects. Beside, teaching conceptualization, confidence, recognition to combining material, and readiness (attitudinal factor) can be used to verify those factors (Masterman *et al*, 2011). This implies success scheme can be defined as measurement of institutional, pedagogical, social, and attitudinal factors. Those factors can be perceived from utility, availability, accessibility, affordability, and applicability (Zang *et al*, 2005; Varnhagen & Digdon, 2002; MacKinnon & Williams, 2006).

Table 1: Variables and Dimensions

<i>No</i>	<i>Variables</i>	<i>Dimensions</i>	<i>No</i>	<i>Variables</i>	<i>Dimensions</i>	<i>Notes</i>
1	Success factors integrating OER into online tutorial, Y	Y ₁ : Utility Y ₂ : Availability Y ₃ : Accessibility Y ₄ : Affordability Y ₄ : Applicability	2	Pedagogical factors X₁	X ₁₁ : Focus of subject X ₁₂ : Interactivity X ₁₃ : Provenance X ₁₄ : Relevance X ₁₅ : Granularity	Each dimension is measured by 2-item 10-question available for each variable Total questions: 50
3	Social factors X₂	X ₄₁ : Social view X ₄₂ : Localization X ₄₃ : Diffusion X ₄₄ : Awareness X ₄₅ : Preference	4	Attitudinal factors X₃	X ₃₁ : Conceptualization X ₃₂ : Recognition X ₃₃ : Confidence X ₃₄ : Readiness X ₃₅ : Responsibility	
5	Institutional factors X₄	X ₂₁ : Reputation X ₂₂ : Fund X ₂₃ : Resources X ₂₄ : Discoverability X ₂₅ : Regulation				

Operationally, summarized from Nagashima (2014), Masterman *et al* (2011), and Rosell-Aguilar (2007), institutional can be defined as an extent of reputation, funding, resources, discoverability, and regulation dimensions. Pedagogic is defined as a weight of subject focus, interactivity, provenance, relevance, and granularity dimensions. Social is defined as quantity of social understanding, localization, diffusion, awareness, and preference dimensions. Attitudinal is defined as a magnitude of conceptualization, recognition, confidence, readiness, and responsibility.

Before launching operational framework, it is valuable to notice success schemes determined by four foremost variables; each is elaborated into dimensions. To ease the design quantitatively, they are thoroughly proposed in Table 1. Now, it is right to establish the operational framework (Figure 1) in harmony with structure of variables involved (Table 1) followed by their dimensions. This framework is used as basis to determine methodology, design, and ways of ensuing analysis accomplished under quantitative process.

Methodology, Design and Hypothesis

This inquiry uses Mixed Methods, i.e., Explanatory Design (Creswell & Clark, 2011). The research was prearranged executed under quantitative first, then followed by qualitative series. Two instruments are developed. They are: instrument in the form of questionnaires for quantitative purpose and list of questions for in-depth interviews/focus group discussions qualitatively.

Table 1 and Figure 1 specified focal points have effect on success factor integrating OER into online tutorial. They are relatable to institutional, pedagogical, social, and attitudinal factors. Success factor (dependent variable, Y) was assessed by perceiving variables (and dimensions) of institutional (moderating variable, X₄), pedagogical (X₁), social (X₂), and attitudinal (X₃). X₁, X₂, X₃: independent variables.

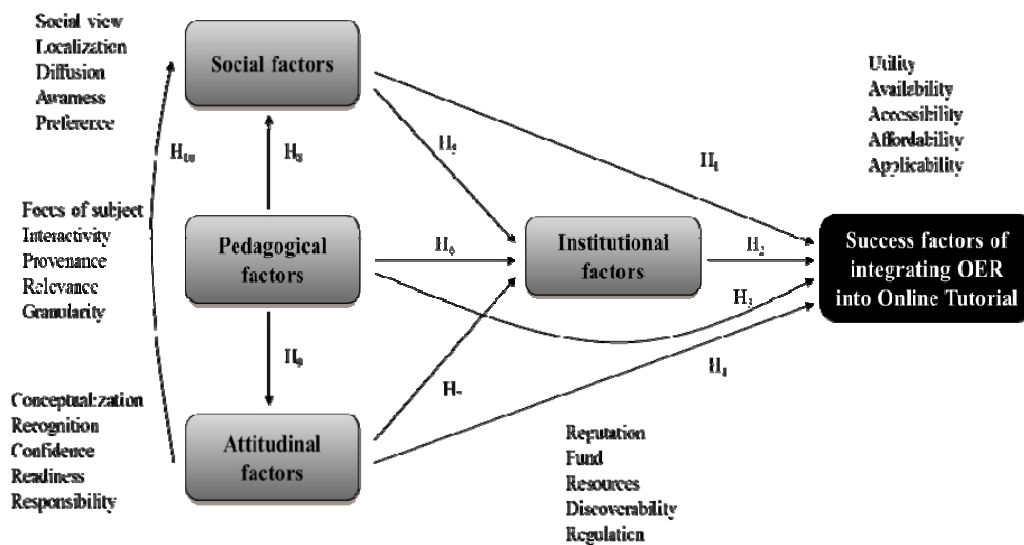


Figure 1: Opeartional model

Y was rated by utility (Y_1), availability (Y_2), accessibility (Y_3), affordability (Y_4), and applicability (Y_5). X_1 was quantified by subject focus (X_{11}), interactivity (X_{12}), provenance (X_{13}), relevance (X_{14}), and granularity (X_{15}). X_2 was enumerated by social view (X_{21}), localization (X_{22}), diffusion (X_{23}), awareness (X_{24}), and preference (X_{25}). X_3 was weighed by conceptualization (X_{31}), recognition (X_{32}), confidence (X_{33}), readiness (X_{34}), and responsibility (X_{35}). X_4 was signified by reputation (X_{41}), funding (X_{42}), resources (X_{43}), discoverability (X_{44}), and regulation (X_{45}). These are the constructions of framework; from/for quantitative purposes.

Questionnaire was developed consisting of 50-question with Likert Scale 1-5 related to 5-variable engaged (Tjiptono & Chandra, 2011). Questionnaires (350) were distributed to 721 respondents randomly. Set of queries were systematically arranged for qualitative purpose. Survey is started to assemble data from respondents (Fowler, 2014). Simple random sampling was selected to determine eligible respondents for quantitative purpose. Purposive sampling (qualitative procedure) was chosen to select respondents (Cochran, 1977; Sugijono, 2012). SEM is used to detect the power of loading factors (Wijayanto, 2008).

This approach scrutinizes ten *hypotheses* (Figure 1). They are: success factor of integrating OER into online tutorial is influenced by social (H_1), institutional (H_2), pedagogical (H_3), attitudinal (H_4). Likewise, institutional is influenced by: social (H_5), pedagogical (H_6), and attitudinal (H_7); social is influenced by pedagogical (H_8) and attitudinal (H_{10}); attitudinal is influenced by pedagogical (H_9).

Results and Discussions

Before conferring results, it is constructive to represent characteristics of respondents as exposed in Table 2, as this will augment our perception on the outcomes.

Table 2: Characteristics of Respondents

Population	721		Respondents		254 (35.22%)
Faculty (%)	Education=50.00		Social Sciences=15.74		Economics=17.7
	Graduate School=5.19		Mathematics & Natural Sciences=14.56		
Degree (%)	Doctoral=4.72		Master=88.18		Bachelor=7.08
Working Experience (Year/%)	0–5=1.57	6–10=11.41	11–15=16.92	16–20=24.80	21+=45.27
Age (Year/%)	20–29=1.96	30–39=14.17	40–49=19.29	50–59=49.60	60+=14.56
Experience in OER (Year/%)	<1=4.56	1–2=48.42	3–4=24.80	5–6=6.69	7+=5.15
Lecturer (%)	Professor: 1.18	Senior: 28.74	Junior: 55.90	Assistant: 12.20	Candidate: 1.96

The results are detailed in the following interpretation and related figure/table. Figure 2 displays one (out of ten) hypothesis is not validated by the analysis ($H_1=0.97$, as $t_{\text{values}} \leq 1.96$, $\alpha=5\%$). This means social does not influence success factor of integrating OER into online tutorial.

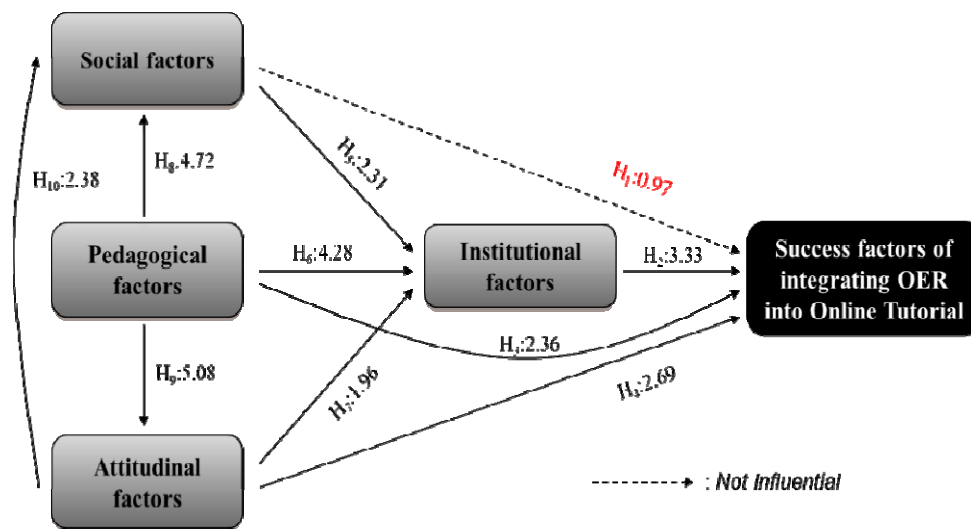


Figure 2: Hypothesis testing

Other nine hypotheses are confirmed by the analysis. They are: $H_2 = 3.33$ (institutional influences success factor), $H_3 = 2.36$ (pedagogical influences success factor), $H_4 = 2.69$ (attitudinal influences success factor), $H_5 = 2.31$ (social influences institutional factor), $H_6 = 4.28$ (pedagogical influences institutional), $H_7 = 1.96$ (attitudinal influences institutional), $H_8 = 4.72$ (pedagogical influences social), $H_9 = 5.08$ (pedagogical influences attitudinal), and $H_{10} = 2.38$ (attitudinal influences social); $t_{\text{values}} \geq 1.96$ ($\alpha = 5\%$).

Having positioned dimensions under quantitative measurement, it is time to relate the loading factors. This is to observe power of relations among variables/dimensions engaged and their behaviors under SEM (Wijayanto, 2008; Hair *et al*, 2009) to work out end results (Figure 3).

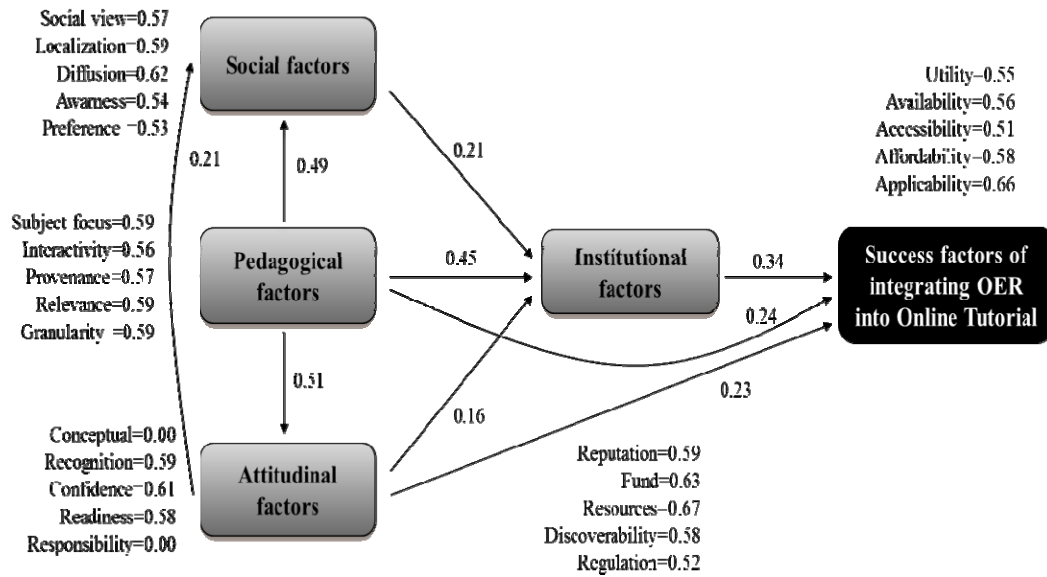


Figure 3: Loading factor

Figure 3 displays five prime upshots quantitatively, as follows:

1. The first effect is related to the most influencing factor on success of integrating OER into online tutorial. That is institutional factor ($X_4 = 0.34$); then followed by pedagogical ($X_1 = 0.24$) and attitudinal ($X_3 = 0.23$) factors.
2. The second finding is concerning order of dimensions of the three main influential factors. They are enlightened orderly as follows:
 - Institutional factor (X_4). Respondents placed resources ($X_{43} = 0.67$) in the first place, followed by funding ($X_{42} = 0.63$), reputation ($X_{41} = 0.59$), discoverability ($X_{44} = 0.58$), and regulation ($X_{45} = 0.52$). Integration of OER should consider these dimensions from broader perspectives.
 - Pedagogical factor (X_1). Respondents put three dimensions simultaneously in the first position; subject focus, relevance, granularity ($X_{11} = X_{13} = X_{15} = 0.59$), followed by provenance ($X_{13} = 0.57$) and interactivity ($X_{12} = 0.56$). Integration should thoughtfully consider pedagogical attributes with high intent.
 - Attitudinal factor (X_3). Respondents categorized confidence ($Z_{33} = 0.61$) in the first level, followed by recognition ($X_{32} = 0.59$), readiness ($X_{34} = 0.58$), conceptual ($X_{31} = 0.00$), and responsibility ($X_{35} = 0.00$). Integration should consider attitudinal in deeper meaning.
3. The third outcome is linked to dimensions order in dependent variable. Respondents considered applicability ($Y_5 = 0.66$) as the most critical dimension in integrating OER into online tutorial successfully. The others are affordability ($Y_4 = 0.58$), availability ($Y_2 = 0.56$), utility ($Y_1 = 0.55$), and accessibility ($Y_3 = 0.51$). The first thing should come to mind on the success of integrating OER is applicability. This is crucial to assure the integration is abounding.
4. The fourth end is connected to unvalidated hypothesis (social factor). Despite it does not influence dependent directly, but via moderating variable, respondents placed diffusion ($X_{23} = 0.62$) as the determinant, followed by localization ($X_{22} = 0.59$), social view ($X_{21} = 0.57$), awareness ($X_{24} = 0.54$), and preference ($X_{25} = 0.53$). The integration should guarantee online tutoring plan is dispersal.

5. The fifth result is interrelated to the power of relation on independent and moderating variables. The result confirms pedagogical ($X_1 = 4.28$) is formost influential factor to institutional (X_4), followed by social ($X_2 = 2.31$) and attitudinal ($X_3 = 1.96$). Pedagogical influenced attitudinal ($X_3 = 5.08$) and social ($X_2 = 4.72$); attitudinal (X_3) influenced social ($X_3 = 2.38$). Despite instruction is delivered on ICT-based, pedagogic aspect in assuring multi-way feedback mechanism should be naturally in place.

Prior to validating conclusive line on the qualitative-quantitative results, it is sensible to reflect whether result is in 'good-fit' category. This is to assure result reliability to take final outcomes based on hypotheses and loading factors analysis. The analysis exhibits they are not in 'good' category (Table 3). The validated model is yet highly dependeable. The model may have a substantial/technical differences in theoretical-methodological intensity.

Table 3: Goodness-fit of the Model

Goodnes of Fit	Cut-off Value	Results	Notes
RMSEA – Root-Mean-Square Error Approximation	≤ 0.08	0.089	Marginal-Fit
RMSR – Root-Mean-Square Residual	< 0.05 or < 0.10	0.059	Good-Fit
GFI – Goodness-Fit Index	≥ 0.90	0.690	Poor-Fit
AGFI – Adjusted Goodness-Fit Index	≥ 0.90	0.650	Poor-Fit
CFI – Comparative-Fit Index	≥ 0.90	0.880	Marginal-Fit
NFI – Normal-Fit Index	≥ 0.95	0.830	Marginal-Fit
RFI – Relatif-Fit Index	≥ 0.90	0.820	Marginal-Fit

Despite goodness-fit is not in good category, it is still valuable to use it as point of reference to pursue answers from qualitative approach. It was found qualitatively that selected respondents firmly agreed upon the operational framework along with its dimension and the initial ranks. Above all, qualitative inquiry came to end that social factor also influenced the success of integrating OER into online tutoring scheme.

Three underlying evaluations have to be explored in-depth to inventively make used of consequences attained. The first consequence is on the diffrence obtained under Exploratory-Design. The second is justification adjacent to respondents characteristics. The third effect is on the implication of findings for future consideration in case conducting further research with comparable topic.

Under quantitative procedure, social factor has uniquely no effect to dependent variable, whereas it has qualitatively. Despite it differs, it does not imply absolutely contradicting one another. Besides, social factor essentially has an effect to the success of intgerating OER but via moderating variable (X_4). Conceptually, this is tolerable as relation can be direct or indirect; to certain extent result is still supporting each other.

Theoretically, Explanatory-Sequential-Design was conducted by first collecting-analyzing data quantitatively, then followed with qualitative procedure prior to interpretation (Creswell & Clark, 2011). It aims at explaining quantitative results further details. Therefore, connecting two strands (quantitative analysis to qualitative collection coupled with using quantitative result to make decision on qualitative research questions, sampling, and data collection in the second phase) become crucial. End result shows one hypotheses (qualitative effects) are not accomplished harmoniously. As one hypothesis is unvalidated by analysis, qualitative inquiry is much more suitable to explain quantitative explanatory findings.

Referring to Table 2, it can be enlightened that respondents regarded at high qualified level staff viewed from educational degree/background, working experience/age, and qualification in Universitas Terbuka context. Nonetheless, most of them have a limited experience in OER; 12.84% get involved in OER for five years/more. It is plausible they may not been able to foresee social factor along with its dimension as pivotal entity favorably have effect to dependent variable directly. Besides, as respondents are faculty members, they may not be sensitive enough to foresee social factor is able to succeed the integration of OER into online tutorial support collectively.

Anticipating comparable research for further inquiry so it is more corresponds to a future alternative course of actions formed for improving University performance, it is prominent to explore magnitude of respondents not only limited to faculty from Universitas Terbuka alone but also by welcoming faculty/experts from other universities. Having involved them, it will enlarge effects obtained accordingly with the operational framework (quantitative inquiry) in amalgamating OER into online support. Sensible insight is necessary to be wisely perceived to avoid probable limitation in retrieving harmony between quantitative-qualitative outcomes. Espousing other methodologies are pertinent to guarantee the inquiry under quantitative-qualitative procedures will be more functional.

Conclusions

Inquiry on factors affecting success of integrating OER into online tutorial encountered slight differences between what was completed under quantitative routines versus qualitative. The established quantitative framework is imperfectly explained yet. Conversely, the qualitative analysis did so. Luckily, they *only* differ – not inevitably contradict in high influence. The end result is still useful for the University in prioritising critical dimensions should be taken in integrating OER along with its elements for students' needs.

Under Explanatory-Sequential-Design, part of Mixed-Methods, the inquiry is able to show 4-variable leading to the success of integrating online tutoring plans. They are orderly displayed along with their dimensions/ranks, plus nine validated hypotheses. Adoption of OER movement can be regarded as a hint the University is on the right path despite less than 13% faculty get experienced in OER.

It is constructive to record most faculty classified institutional factor as the most influential variable to integrate OER into online tutorial lucratively. The University should conquer this outcome by concentrating on the 5-dimension within institutional variable. The availability of resources is vital factor to integrate OER successfully into online tutorial. University is well-advised to anticipate other four dimensions to secure adoption, integration, and implementation of OER into academic practice (they will not obstruct faculty to get involved successfully in future). Conjecturing this know-how is universally typical in ODL ambience, management and academic would be well-suggested to ruminate on variables studied (along with their associated dimensions discussed). It aims at dedicating them indisputable thoughts that institutional factor become central component to sustain completion of OER as an integral part of focus in ODL structures.

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THE IMPACT OF USING VIDEOS IN FORMATIVE ASSESSMENT AND ITS EFFECT ON SUMMATIVE ASSESSMENT AMONG ODL LEARNERS

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Abstract

Formative assessment is used to monitor students' learning so that ongoing feedback can be given to instructors about their teaching, and if necessary, ways on how to improve. The students can be told about their accomplishments and in certain cases, ways of enhancing or bettering their learning. Formative assessments help students to identify their strengths and weaknesses and target areas that need to be worked on. Formative approaches may be particularly appropriate for adult learners as it allows them to apply their own experiences in the formative assessment. At Open University Malaysia (OUM), formative assessment is implemented in the form of assignments. Various supports can be given to the learners to assist them to complete the assignment. This includes the provision of scaffolds in the assignment, mid-way review of the assignment, providing chunked-based questions, etc. In this paper, we investigate the effect of using technology, in particular video-based lessons to support adult learners in completing their assignments. A total of 42 adult learners enrolled in a programming course offered under Bachelor of Information Technology had participated in this study. These students were from different cohorts of the same program. All these students were required to take the assignment as part of their formative assessment. The assignment consists of TWO questions. Video support was given for the 1st question while the 2nd question did not have any video support. The videos prepared using a top-down approach in which there will be a main video highlighting the overall approach in solving the assignment question followed by a detailed video lesson on the concepts that were covered in the assignment. The students were given EIGHT weeks to complete both of the questions. The completed questions have to be submitted via LMS and was marked by one of the authors. At the end of the semester, the students sat for the final examination. THREE questions from the final examination tested the learning outcomes of the 1st and 2nd questions respectively. Results showed that students had positive outcomes for the assignment question that was supported by the video lessons. However, students' performance in the summative assessment was not encouraging for those questions in the final examination that matched the learning outcome of the assignment question which was reinforced by the videos. Detailed results are discussed in the paper.

Introduction

Advances in technology have led to an increase in enrolment in university level through distance education instruction mode. Distance learning allows adult learners who are engaged in employment, family, and/or other responsibilities to update knowledge and skills related to their jobs by saving on travel costs and allowing a flexible schedule. Moore and Kearsely (2010) indicated that most distance education students are adults between the ages of 25 and 50. The number of programs for adult learners delivered online in higher education has steadily increased over the last few years. According to the results of a survey administered by the National Center for Educational Statistics (NCES), 56 percent of all degree-granting higher education institutions offered distance courses during the 2000–2001 academic year (Waits & Lewis, 2003). In 2011, 34 percent of 1000 representative higher education institutions offered a complete online degree program (Allen & Seaman, 2011).

The Problem

In spite of the growth in online learning, high dropout rates have been of concern to many organizations and higher education institutions. Research has typically shown that attrition rates are often 10-20% higher for online courses than for traditional, face-to-face classrooms (Holder, 2007). A number of studies have shown that a higher percentage of students participating in an online or distance learning course tend to drop out compared to students in a face-to-face classroom (Hiltz, 1997; Phipps & Merisotis, 1999).

Retaining learners has always been an ongoing challenge in the ODL institutions worldwide. This is no exception to Asian-based ODL institutions such as Open University Malaysia (OUM) and Sukothai Thammathirat Open University (STOU). In both institutions it was found that the attrition rate is highest in the early part of their study, mainly in the first semester or year (Latifah et al., 2009). The overall retention rate of OUM is between 65-70% while in STOU it is between 50-60%. This represents a huge loss in revenue to the institutions concerned as well as a lost opportunity to learners in terms of upgrading their level of personal and career development and achievement. Even though enrolment in online coursework is higher than traditional classroom education, the dropout rate for online courses is also higher and thus student success rates are lower (Moody, 2004). Long, Dubois, and Faley (2009) stated, “Dropout rates for online courses are one of the biggest problems facing organizations when implementing online training”.

One of the reasons of the drop-out was the students failure to pass formative assessment such as assignments. Success in online courses typically requires a high level of discipline and self-direction, and enough time each week to complete all assignments (Rovai, 2007). According to Park (2007), internal factors in which assignment issue is a part is one of the reasons for adult’s drop out as shown in figure below.

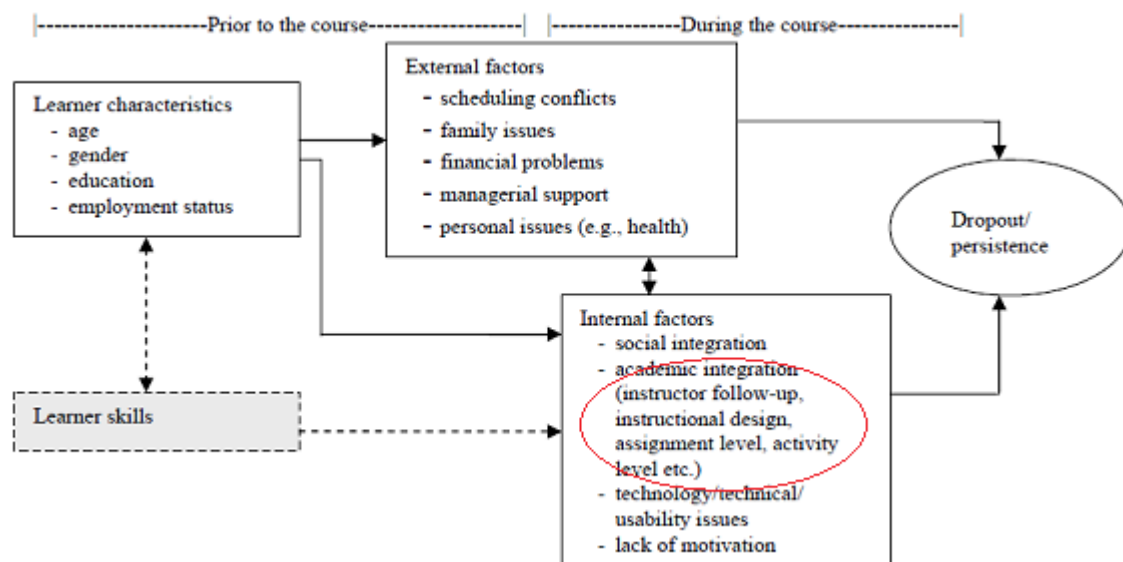


Figure 1: Theoretical framework for adult dropout in online learning (Park, 2007)

Santhi et al. (2015) discovered that the dormant and inactive students felt that the assignments were too demanding and too time-consuming. This finding is reinforced by Xenos et al. (2002) who found out that academic problems contributed greatly to the students dropping out, of which the biggest contributor for the students to drop out in which 8.9% of this related to the incompleteness of the assignment.

Objective

The objective of this paper is to investigate the effect of using technology, namely video demonstrations and video lessons to support adult learners to complete their assignment. The specific objectives of the paper are:

- To analyze the students perception on having videos to support their assignment;
- To analyze the effect of using video on their formative assessment, in particular the assignment;
and
- To analyze the effect of using video on their summative assessment, in particular the final examination.

Methodology

This study adopted an interpretive case study methodology approach. Erickson (1986, pp. 119-161) described interpretive case studies as:

... the intensive investigation of a single object of social inquiry such as a classroom ... and that it holds major advantages in that it allows the immersion of oneself in the dynamics of a single social entity and enables the uncovering of events or processes that one might miss with more superficial methods.

Burns (1997) further commented that the case studies have a number of purposes or functions within educational research. Due to their intense and subjective nature, he stated that they are particularly suited to acting as preliminaries to major investigations by providing a "source of hypothesis for future research" (Burns, 1997, p. 365) or by assisting in developing deeper understanding "of the class of events from which the case has been drawn". The methodology in this instance allowed the researchers to gain deeper insights into any value the video lessons held from the students' perspective. Interpretive case study approach had also been used by Falloon (2011) for his study concerning online learning.

Participants

A total of 42 adult learners enrolled in a course offered under Bachelor of Information Technology at Open University Malaysia (OUM) had participated in this study. Their average age is 32.9. These students belonged to different cohorts of the same program. The course is delivered in the blended approach which consists of limited face to face tutorial, self-managed learning and online learning. The selected course is CBOP3203 - Object Oriented Programming in the Jan 2015 semester at OUM. It is a highly technical, IT-based subject. All learners were given access to the online learning using university's LMS system and a limited number of face to face tutorials (8 hours). Self-managed learning (SML) constitutes the largest portion of study time followed by online learning and face to face tutorials. Online learning that occurs through the LMS is an important component in the support for learners' SML.

The Subject

CBOP3203 – Object oriented Programming is a programming subject with a strong focus on problem-solving and analytical skills. The subject emphasises on Java. The subject is 3 credits with a total of 120 learning hours with the following student learning time:

Table 1: Estimation of Time Accumulation of Study Hours

Study Activities	Student Learning Time (SLT)
Reading the subject module	63
Tutorial attendance	10
Online participation	12
Revision	15
Completing the <u>assignment</u>	20
TOTAL STUDY HOURS	120

The Assignment Question

There are TWO questions in the assignment for this subject. More details of the questions are given in Table 2.

Table 2: Details of the Assignment Questions

Question	Nature of question	Objective of the question	Deliverables	Video Support
Question 1	Problem solving by writing program codes	<ul style="list-style-type: none"> To expose students in writing Java programs using array and to handle input/output operations 	Program source codes	YES
Question 2	Problem solving by writing program codes	<ul style="list-style-type: none"> To expose students in writing Java class programs and creating objects 	Program source codes	NO

Students are required to do both the questions and submit at the same time. As indicated in Table 1, the students learning time for assignment is 20 hours.

Procedures

All these students are required to do the assignment as part of their formative assessment. The assignment consists of TWO questions. Video support was given for the 1st question while the 2nd question does not have any video support. The students were given 8 weeks to complete both of the questions as shown in Table 3. The completed question must be submitted via LMS in a single file and was marked by one of the authors. At the end of the semester, the students sat for the final examination. THREE questions from the final examination test the learning outcomes of the assignment's 1st and 2nd question respectively.

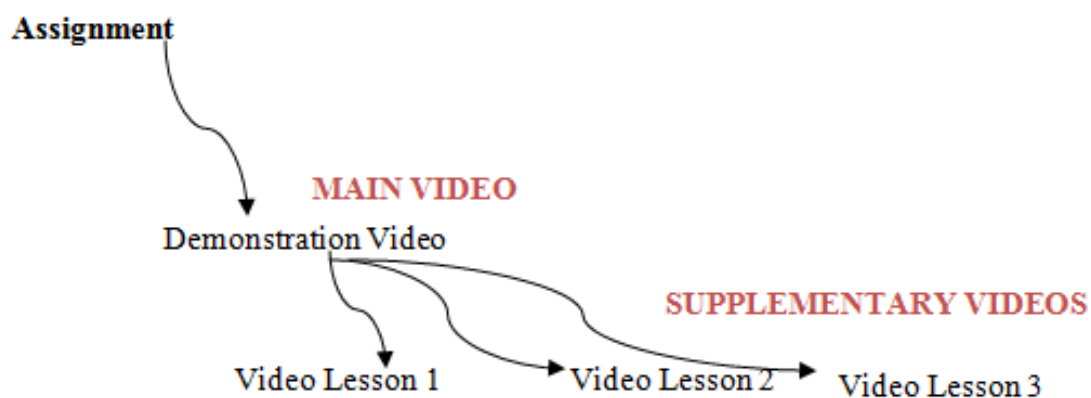
Table 3: Weekly Activities Pertaining to the Assignment

Week	Assignment Activity
Week 1	Assignment uploaded in LMS
Week 2	All the videos are uploaded into LMS
Week 3	Students attempt Question
Week 4	Students attempt Question
Week 5	Students attempt Question
Week 6	Students attempt Question
Week 7	Students attempt Question
Week 8	Students submit their assignment via LMS
Week 9	Revision week
Week 10	Revision week Assignment marks are announced
Week 11	Students sit for the final examination

The videos are maintained in the LMS until week 8.

Videos

The videos prepared using a top-down approach in which there will be a main video highlighting the overall approach in solving the assignment question followed by a detailed three supplementary video lessons on the concepts that covered/tested in the assignment (Figure 2). This approach is adopted to give a gradual exposure on the assignment's question requirement to the students.

**Figure 2:** Types of video developed for the assignment question

The details of these videos are given in Table 4.

Table 4: Details of the Videos Prepared to Support the Assignment's 1st Question

Video Type	Nature of Video	Downloadable?	Duration (minutes)
Demonstration Video [Main Video]	<ul style="list-style-type: none"> An interactive video Give an overview about the assignment question Give an overview on the main concepts that need to be understood first before attempting the questions. Students need to watch the supplementary videos for the detailed explanation on these concepts The video allows interaction in the form of quiz that students can attempt The video also give hints on solving the questions 	NO - view only	6.25
Video Lesson 1 [Supplementary Video]	<ul style="list-style-type: none"> An interactive video The video discusses about Java and guide on how to install and execute a Java program. In addition, a brief discussion about Java program is also given The video also discuss a problem with elaborated answer 	NO - view only	19.57
Video Lesson 2 [Supplementary Video]	<ul style="list-style-type: none"> The video discusses about a concept of programming (<i>for</i> loop) to be applied in the assignment The video also discuss a problem with elaborated answer 	NO - view only	16.11
Video Lesson 3 [Supplementary Video]	<ul style="list-style-type: none"> The video discusses about a concept of programming (<i>array</i>) to be applied in the assignment The video also discuss a problem with elaborated answer 	NO - view only	15.16
TOTAL DURATION			57.49 (0.96 hour)

All the videos were loaded in OUM's LMS and can be viewed by all the learners (Figure 3). The videos are not downloadable and can be viewed online only. Examples of demonstration video (main video) and video lesson are given in Figure 4 and Figure 5 respectively.

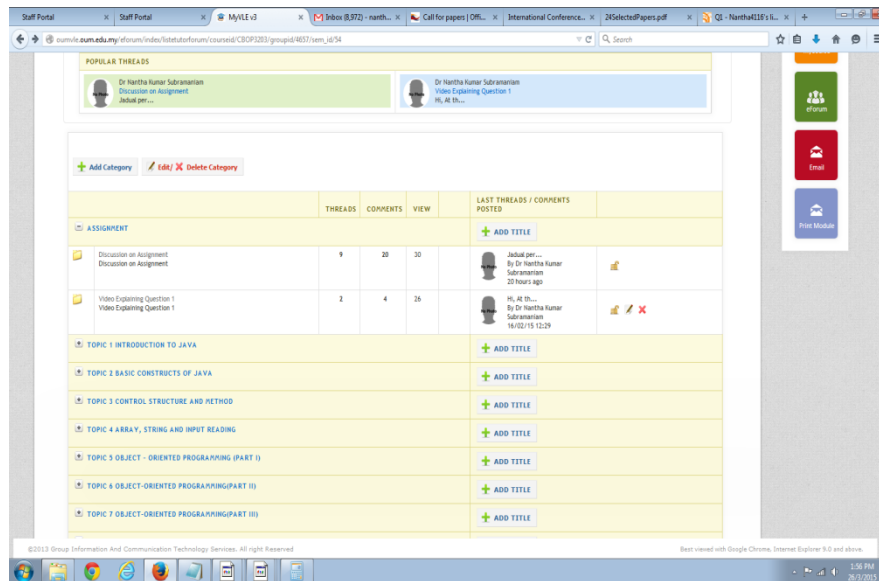


Figure 3: Videos for the assignment are uploaded into the university's LMS

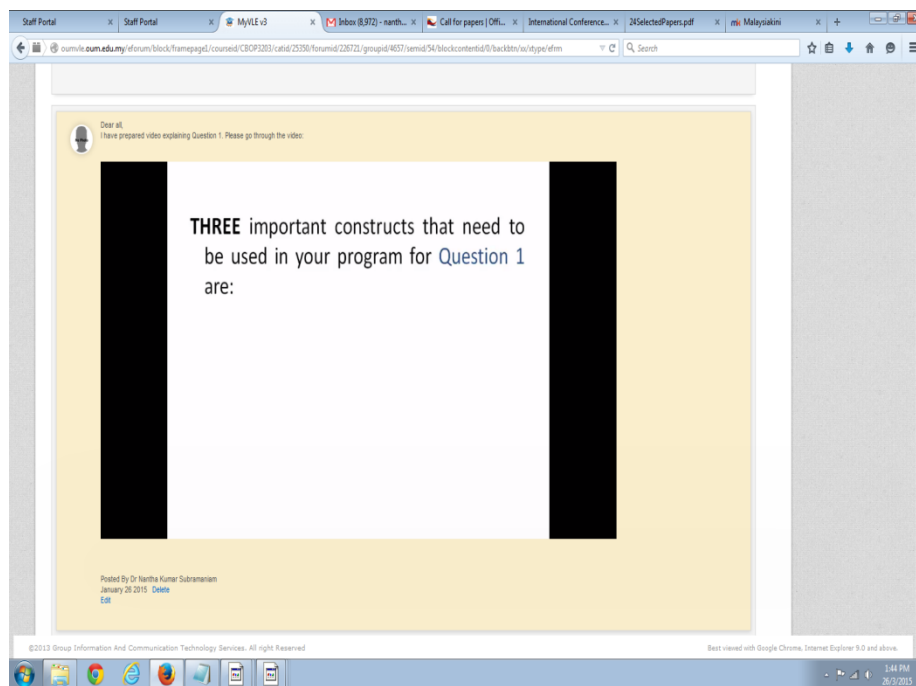


Figure 4: The demonstration video provided for Question 1 [Assignment]

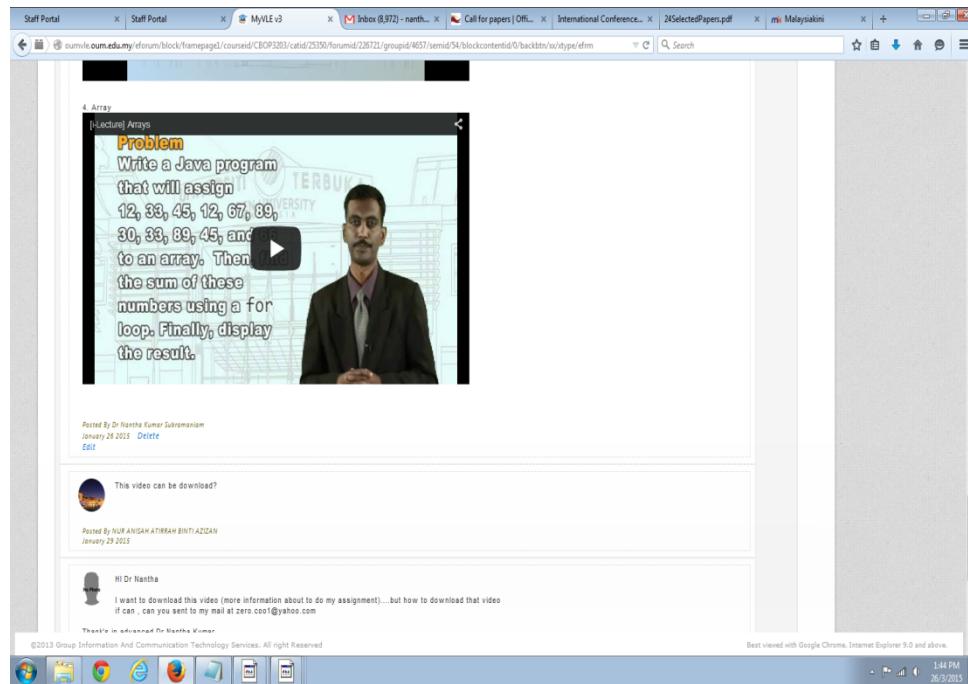


Figure 5: One of the video lessons provided for Question 1 [Assignment]

Grading

The grading of the assignment is done by one of the authors using the marking rubrics. Rubric is defined as: "a scoring tool that lists the criteria for a piece of work or 'what counts'. Rubrics help the grader to provide a consistent and objective grading. The rubrics adopted has different levels of performance expected for several levels of criteria or quality of the following:

- Tasks completion (contribute 50% of the total marks)
- Coding standards (contribute 10% of the total marks)
- Program runtime (contribute 20% of the total marks)
- Efficiency and documentation of the program (contribute 20% of the total marks)

The rubrics have exactly 5 levels (0-Weak, 1-Low, 2-Fair, 3-Above Average, 4-Excellent) with each criteria above having its own weightage. The grader is the expert in this field with over 12 years experience teaching the same subject.

The Examination Question

At the end of the semester, the students sat for the final examination. The final examination consists of TWO parts, Part A and Part B. Part A consists of short theoretical questions and students must answer all the questions. On the other hand, Part B consists of THREE programming questions and students must answer any two from this part. In this research, only students' answers for Part B's questions were analyzed. Question 1 of the final exam's Part B matched the learning outcome of assignment's Question 1 (that has video support) while final exam's Question 2 and Question 3 (both from Part B) matched the learning outcome of the assignment's Question 2 (that has no video support) (refer Table 5).

Table 5: Matching of Learning Outcomes between Assignment and Final Exam Questions

Assignment Question	Final Examination
Question 1 (<i>with video support</i>)	Question 1 (Part B)
Questions 2 (<i>with no video support</i>)	Question 2 (Part B) Question 3 (Part B)

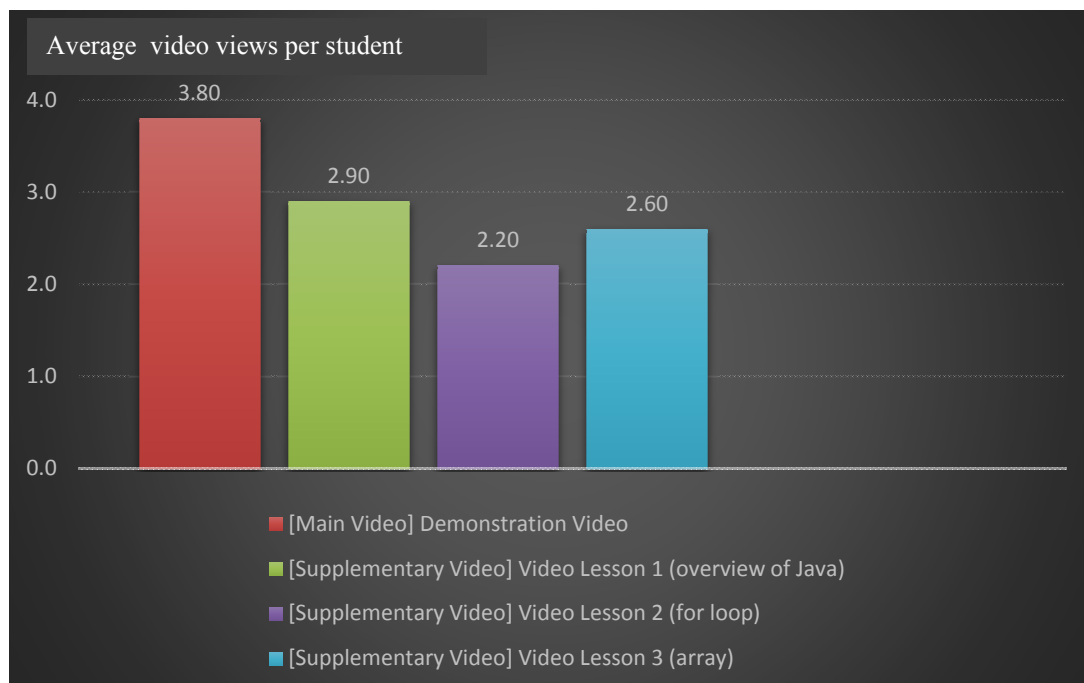
Data Sources and Analysis

The impact of using video lessons for assignment and final exam questions were analyzed using outcome measures with quantitative means that include the analyses of student solutions to the assignment problems, final examination questions and the students' perception ratings using Likert scale.

Results

The students watched the video demonstrations (i.e. the main video) 130 times. On average, a student watched the main video 3.8 times. On the other hand, video lesson 1, video lesson 2 and video lesson 3 had been viewed on average 2.9, 2.2 and 2.6 times respectively by the learners (refer Figure 6).

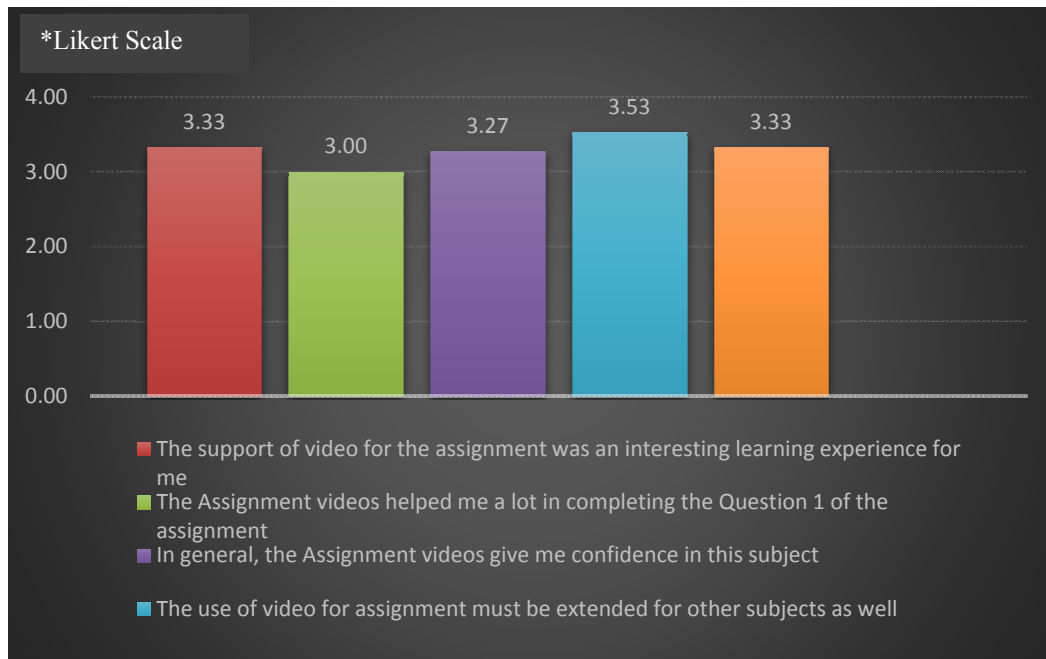
The demonstration video had the highest number of page views. This is not surprising as this video is the one that provided hints and advices on solving the assignment question. Although 42 students registered for the subject, only 34 students submitted their assignment answer while 33 students sat for the final examination.

**Figure 6:** Average views of the videos

Detailed results are presented in the next sections.

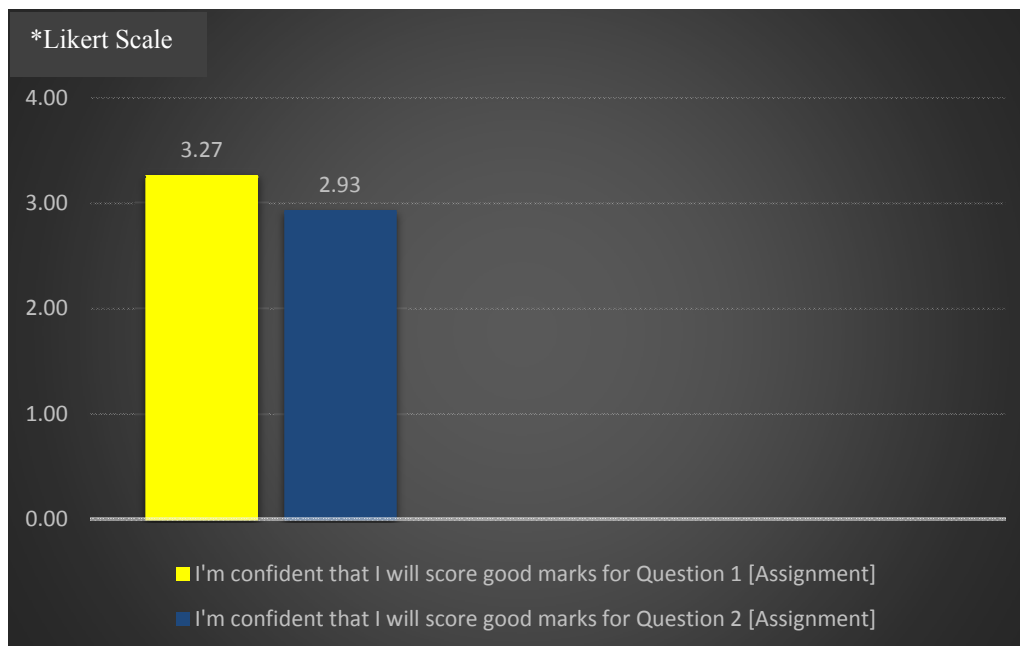
Results: Students Perception

Data was collected to determine students' perceptions of using video for assignment. A total of 15 students (44% of the those students who had submitted the assignment) had participated in this survey. The questionnaire has TWO parts. The mean scores of all the items in the questionnaire are shown in Figure 7 and Figure 8 respectively.



* Note: 1 = strongly disagree and 4 = strongly agree

Figure 7: Mean scores of the items for the perception on the using video for assignment



* Note: 1 = strongly disagree and 4 = strongly agree

Figure 8: Mean scores of the items for the perception on their performance on assignment

The result shows that the learners gave good responses to all the items mentioned in Figure 6. The findings have indicated that the students received favourably on the use of video assignments in order to complete their assignment. Based on the items in Figure 7, students indicated that they have more confidence to get higher marks for Question 1 [Assignment] that has video support as compared to Question 2 [Assignment].

Results: Effect on Formative Assessment

The students' performance in the assignment according to Question 1 and Question 2 are given in Figure 9 and Figure 10 respectively.

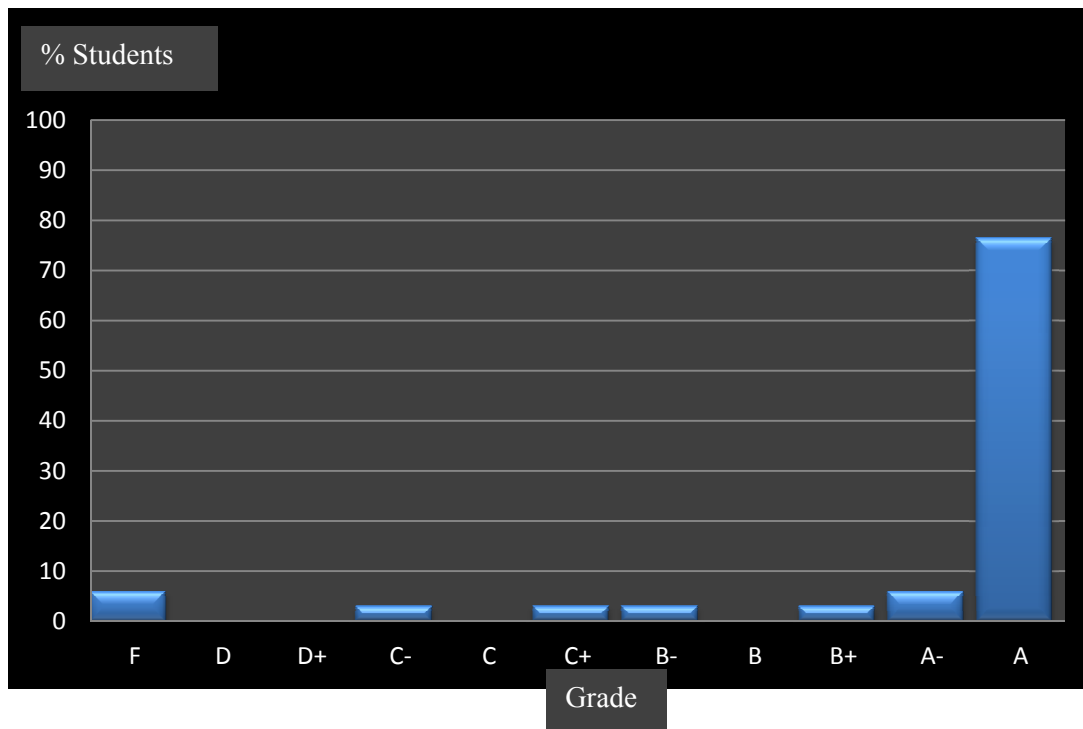


Figure 9: Percentage of students based on the grades for Question 1 [Assignment]
(Mean score: 85.4%)

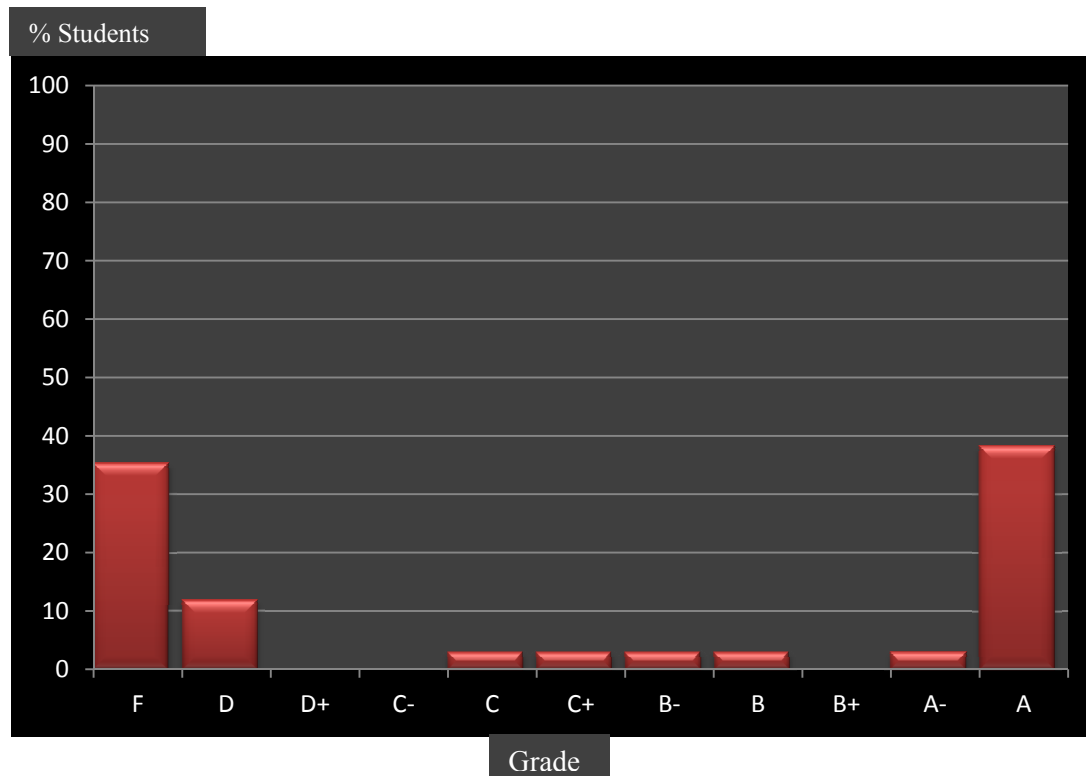


Figure 10: Percentage of students based on the grades for Question 2 [Assignment]
(Mean score: 55.3%)

90% of the students obtained at least grade B for Question 1[Assignment], However, only 52% of the students obtained at least grade B for Question 2[Assignment] that comes with no support for the video lessons. 4% of the students failed Question 1[Assignment] but almost 35% of the students failed Question 2[Assignment] (i.e. Grade: F). These findings matched the students perception on their performance on assignment as indicated in Figure 8.

Other observations:

- 35% of the students did very well for Question 1[Assignment] but did badly for Question 2[Assignment]. It means the video really helped them for Question 1[Assignment];
- 35% of the students did very well for both questions. These are smart students who don't actually need the video support;
- 5.8% of the students did well in Question 2[Assignment] but not so for Question 1[Assignment]. These students may not have utilized the video support and may have given their focus too much for Question 2[Assignment];
- 8.8% students had average or below average level of performance for both questions. These students may not have utilized the video support for Question 1[Assignment]; *and*
- 64.6% of the students had higher marks for Question 1[Assignment] as compared to Question 2[Assignment].

Results: Impact on Summative Assessment

The students' performance in the final examination is given in Figure 11.

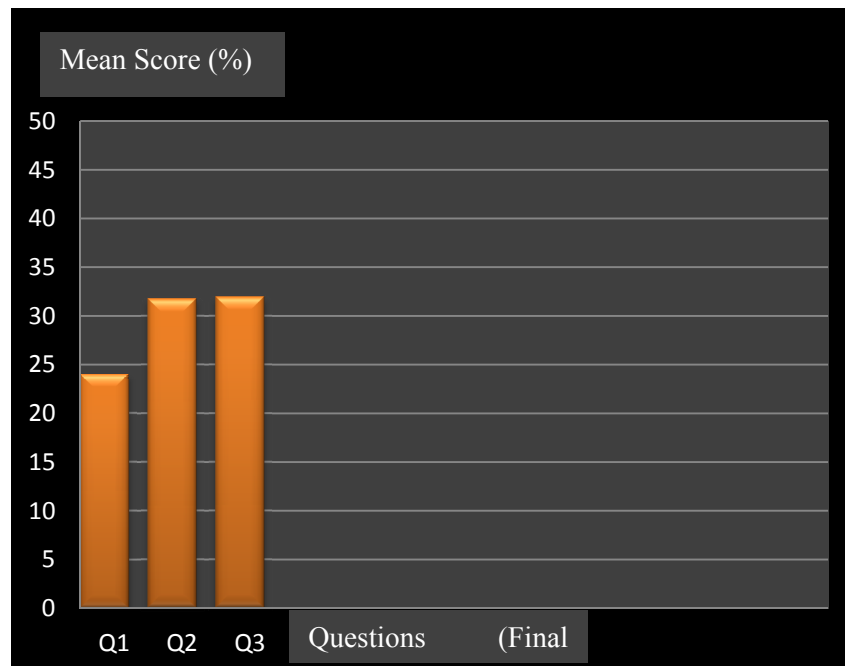


Figure 11: Students performance in the final exam according to the questions

The average scores for Question 1 [Final Exam], Question 2 [Final Exam] and Question 3 [Final Exam] are 24%, 31.75% and 31.95% respectively. 25 students attempted Question 1 [Final Exam] while 24 students attempted Question 2 [Final Exam] and 18 students attempted Question 3 [Final Exam]. Contrary to the findings in the previous section on assignment's performance, the average student score for Question 1 [Final Exam] (which has learning outcome matched to Question 1 [Assignment] that was given video support) is lower than Question 2 [Final Exam] and Question 3 [Final Exam] (which has learning outcome matched Question 2 [Assignment] that was not given any video support). However, it is interesting to note that overall performance for Question 1 [Final Exam], Question 2 [Final Exam] and Question 3 [Final Exam] are not encouraging as none of the questions has average score above 50%.

Discussion and Conclusion

There has been much research in the area of using video to stimulate thinking and understanding and enhancing the learning process. Video usage can impact on teaching and learning and invariably this has encouraged the facilitators to consider the flipped classroom model where learners can deliberate and capture the salient points in the lecture content at their pace and explore content more deeply during class time. The flipped classroom is often defined as the opposite of the traditional lecture model but essentially it is designed to open opportunities for students to become more actively involved in content both individually and with peers.

Several educationists have stated that there is a connection between visual clues, the thinking process and the recall of new knowledge. The creative challenge of using moving images and sound through videos, to communicate a topic is indeed engaging and insightful, but it also enables students to acquire a range of transferable skills in addition as well. These include research skills, collaborative working, problem solving, technology, and organisational skills. In some cases, video can replace the presence of an instructor in communicating facts or demonstrating procedures to assist in mastery learning where students can view complex clinical or mechanical procedures as many times as they

need to. Furthermore, certain interactive features of modern web-based media can be used to promote 'active viewing' approaches with students.

The impact has been seen when students were attempting their assignment in Question 1 [Assignment] as against the lack of such reinforcement in Question 2 [Assignment]. However, the students' responses during examinations did not reflect this engagement. In fact the students, who did Question 2 [Assignment], did better in the final examination though they were not privy to the use of the videos in their assignment for the question that matched the same learning outcome.

One of the main roles that facilitators should fulfill is to facilitate learning. In other words, the task is to make the process of learning easier for students to accomplish. This does not mean that the curriculum should be simplified or lowering the quality or standards. Neither does it mean that information should be tasked to memory for the students. What it means is that there is a need for students to learn how to process information critically and also absorb the learning processes.

Facilitating learning goes beyond the physical learning environment. The structure of learning materials should be delivered in ways of synchronizing it within the total educational experiences of the students. The result would be to not just pass the examinations but inculcate in the learners the greater capacity and desire to learn on their own that in turn would result in motivating them to seek information and develop ideas through their own initiatives.

When students feel empowered in their learning, they are more likely to accept ownership of it. Students need to feel the attachment to knowledge exposed and to get involved in their learning. Cognitive research has shown that whatever is presented in its conceptual form, must be reinforced with real world experiences and information. Thus the information becomes important and pertinent in their daily lives.

Definitely it is too early to attempt broad generalization of the claims based on this single study. The research was done with a limited, small sample and to draw generalizations from it might seem overwhelming. However it is pertinent to realise that this research can be extended to more learners in the ODL mode to draw conclusions on the positive nature of using video lessons to support the learners in completing their assignments. It's postulated that student success can be increased by creating a more user -friendly academic environment within the online coursework. What is needed is to utilize some kind of support of technology that is already available. In the final analysis, the aim is to create independent learners who can assimilate knowledge for its own sake and become empowered to do so. In our experiment we may have shown that using videos has helped in the learning process and in this case, completion of an assignment. But in the true sense, we tend to question whether we have succeeded in creating the independent learners who not only know how to go about learning but also have the inertia and passion for learning further that we aspire for in the true sense.

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HOW OVERCOMES DIFFERENCES AMONG STUDENTS' KNOWLEDGE AND PREPARATION LEVELS? - IN THE CASE OF A BIOLOGY COURSE OF THE OPEN UNIVERSITY OF JAPAN -

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Abstract

The Open University of Japan (OUJ) offers seven biology courses for undergraduate students per semester. These courses are available through television and the Internet. The majority of the courses were created by the same faculty team. One course is introductory level, which overviews the fundamental concepts of biology. Others are intermediates-level courses each of which covers for a particular subject area. These intermediate-level courses had high or average scores of the course evaluations by students, whereas the score of the introductory course was low. The written comments on the evaluation of the introductory course showed that several students complained about the difficulty of lectures and a final examination. This suggests that a mismatch between the knowledge and subjects that students expected and those that the instructors expect them to have might occur. The mismatch may depend on the age distribution of students in OUJ and the progress in biological sciences. The students of OUJ are nearly equally distributed in the age groups from 30s to 60s. And the largest age group is 40s. In addition, there have been dramatic advances in biology over the past 50 years. Therefore, subjects of biology learned in high school differ from generation to generation. These may make gaps between the contents of the introductory course that students expected and the instructors provided. In this paper, we will discuss how to overcome this problem.

Introduction

The Mission of the Open University of Japan (OUJ) is that to provide educational opportunity to all the people in Japan via TV, radio and the Internet and to offer lifelong learning programs for them. At present, the total number of students in undergraduate program in OUJ is 83,892 (Regular students 56,123, Non-degree students 24,452 and auditing students 3,317) at the academic year 2014 (OUJ 2014, 2015a). OUJ attracts students from a wide age range. The highest proportion of students by age groups was 40-49 (24%). The percentage of students in other age groups varied from 16 % to 19 % except the age group 70 and higher (7 %) (Fig 1, OUJ Foundation 2015). In 2015, 99 percentages of newly-enrolled students in undergraduate program of attending universities in Japan were ages from 18 to 22 (MEXT 2015).

OUJ contains only one department, the department of Liberal Arts. This department offers six major disciplines, Living and Welfare, Psychology and Education, Society and Industry, Humanities and Culture, Informatics, and Nature and Environment. The wide ranges of subjects encourage our students and the general public to explore their intellectual and personal passions. The students of OUJ tend to select their courses based on their interests, not on their major.

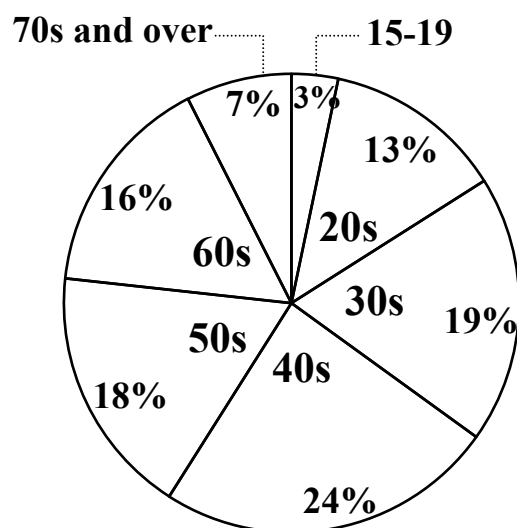


Fig 1: Student ratio by age groups in OUJ

Systems of Teaching in OUJ

OUJ offers three types of teaching and learning systems for lecture courses: broadcast lectures by TV, radio, and the Internet, schooling, and online. At present, the broadcast lectures, which use video- and voice-recorded programs for broadcasting, are the core of educational curriculum in OUJ. These lectures are broadcasted using TV and radio or provided on demand through the Internet. At the first semester of 2015 (from April to September), total 349 broadcast lecture courses were offered. In addition, classroom lectures are also offered at 50 local study centers located around the country. Total 1,385 classroom lecture courses were held at the first semester of the 2015. OUJ also starts two online lecture courses at the last semester (OUJ 2014, OUJ Foundation 2015).

A typical 2-credit broadcast lecture course would meet for one 45-minutes lecture per week for 15 weeks with self-learning from a textbook. All the broadcast lecture courses require students to do a mid-term homework and take a final examination at one of the local study centers. In the case of classroom lecture courses, 1-credit course would meet eight 85-minutes lectures on a weekend.

The broadcast lecture courses use pre-recorded lectures and textbooks prepared for each course. The contents of courses and their teaching materials are fully updated once every four or six years.

Course Evaluation by Students in OUJ

To improve the quality of courses and teaching methods and to determine whether course content meet the needs of students, course evaluation by students are carried out for updated or newly developed broadcast lecture courses at the end of the semester just after their updating or developing (OUJ 2015b). In addition, course evaluations by faculty members are also conducted after the evaluations.

Questionnaires used for course evaluation by students are the same format for all the broadcast lecture courses. The unsigned *questionnaire* contains 23 questions with a four point *scale* (4: agree, 3: agree slightly, 2: disagree slightly, 1: disagree) and three *open-ended questions*. *OUJ sends the questionnaires to the randomly assigned 250 students per broadcast lecture course. The questionnaires are returned from students by postal mail after all final grades for the courses are available to students. The overall response rate is 41.9 percent at 2014 (OUJ 2015b). In the case of the evaluations for classroom lecture courses, response rates are ranged from 80 to 95 percent. The high rate might be due to the paper-based evaluations conducted at the last lecture.*

Biology Courses in OUJ

Nature and Environment in the department of liberal arts in OUJ offers a wide range of mathematics and natural science courses. At present OUJ offers seven broadcast biology courses for undergraduates and one for master's degree. Classroom lecture courses for biology are also offered for undergraduates. The course evaluations are conducted for those broadcast lecture courses and classroom lecture courses. Out of 8 broadcast biology courses, I organized 5 courses with full-time or adjunct faculty members. These biology courses involve multiple instructors, ranged from two to five. The number of 45-min lectures that I teach ranged from four to eight per course. I also teach two classroom lecture courses and one laboratory course per year.

The levels of the eight broadcast courses are as follows. One course is introductory level, which overviews the fundamental concepts of biology. Six are intermediates-level courses each of which focus for a particular subject area (ecology, molecular and cellular biology, evolutionary biology, zoology, plant science, and biotechnology and microbiology). Last one is for master's degree courses for biodiversity. The introductory course is based on advanced course of biology in high school. In Japanese high school, students select one or two of the three courses; chemistry, biology and physics. Most of students select chemistry because chemistry is a required subject in many high schools. 70

percent of students in high school learn basic course of biology. Only 20 percent learn advance course of biology. Therefore, the introductory course includes the contents of biology taught in high school. Another difference between the introductory and other courses is the range of subjects treated. The intermediate courses and the master's degree courses covered a specific subject. On the other hand, the introductory course covered a wide range of biology, from molecular and cellular biology to earth and environment.

Evaluation by Students for Biology Courses

4 of 5 broadcast courses that I organized have been evaluated so far. The types of the four evaluated broadcast courses are as follows. One course is the introductory course. Two are intermediate-level courses. One is a master's degree course. The evaluation scores for the intermediate courses and the master's degree course are closely related to the scores of OUI average. The OUI average scores of "overall satisfaction with the course" for TV broadcast courses vary from 3.29 to 3.14 (2011-14). The scores of the two intermediate and the master's degree courses are 3.38, 3.40, and 3.36 respectively. In contrast, the score of the introductory course was low rating (3.00). The written comments of the open-ended questions showed that several students complained about the difficulty of lectures and a final examination. This suggests that a mismatch between the knowledge and subjects that students expected and those that the instructors expect them to have might occur.

The low score of the introductory course might not be due to the quality of instructors. I teach 8 out of 15 lectures in the introductory course. The remaining 7 lectures are taught by a faculty member for biology. The faculty member also organized some of biology courses. The evaluation scores of broadcast lecture courses the faculty member organized are higher than OUI average scores except for the introductory course. In addition, evaluation scores of introductory courses in other areas of science tend to be low scores. The scores of "overall satisfaction" are ranged from 3.17 to 2.89.

It is possible that the low rating of the introductory biology course is the nature of introductory courses in science. However, biology might be more popular than physics or mathematics for students in non-STEM majors because biology is non-math intensive field. In the case of intermediate-level courses, biology courses get higher evaluating scores than courses for physics and mathematics. In contrast, the score of the introductory courses in biology is close to or lower than these introductory courses. Thus, to reveal the reason of the low rating of the introductory course and to improve the quality of the course are major concern.

Specific Issue for the Introductory Course in Biology

The results of the questionnaire show several clues for this issue. One is the score of the question "time and effort for learning". Comparing to OUI average of TV broadcast courses, the score of the introductory course in biology was low rating. Especially, some students thought that they did not spend enough time studying with video-recorded lectures of the introductory course. For the question "time and effort for learning with video lectures", the difference of the scores between the OUI average for TV broadcast courses and the introductory course is 0.4 (The average is 2.96 and the course score is 2.56). Students are able to record the broadcast lectures using a recorder. In addition, the recorded lectures are available through the Internet whenever they use. However, the students responding the course evaluation claim to spend inadequate time learning. On the other hand, the score of the question "time and effort for learning with a textbook" for the introductory course in biology (3.20) are close to the OUI average (3.28). Besides, introductory courses in other areas of science show opposite pattern. Students taking the courses may prefer studying with video lectures to textbook.

To investigate this contrast, checking the course evaluation of other courses carefully, several courses have low rating for the question “time and effort for learning with video lectures”. These courses have a similar pattern with the employment status of the responding students. The employment status of the students in undergraduate program of OUI is show in Fig 2. Half (56 %) of the students engage full-time job (OUI 2015a), whereas 64 percent of the students which respond the questionnaire to the introductory course have full-time and/or licensed jobs. In the case of intermediates courses in biology, the ratio is ranged from 32 to 39 percent. Introductory courses in other areas of science also show similar ratio, which is ranged from 37 to 42 percent, with the intermediates courses in biology. These results suggested that students entering the introductory course in biology are relatively busy for their job and this can make difficult to study with video lectures.

Second reason of the low rating is that lots of students taking this course are non-STEM (Science, Technology, Engineering and Math) major. The introductory course in biology is designed to entry-level. Thus OUI recommend taking this course to all the students. Of the students responding the questionnaire to the introductory course in biology, 34 percent belong to Nature and Environment. In the case of intermediate courses in biology, the ratio is more than 50 percent because these courses are

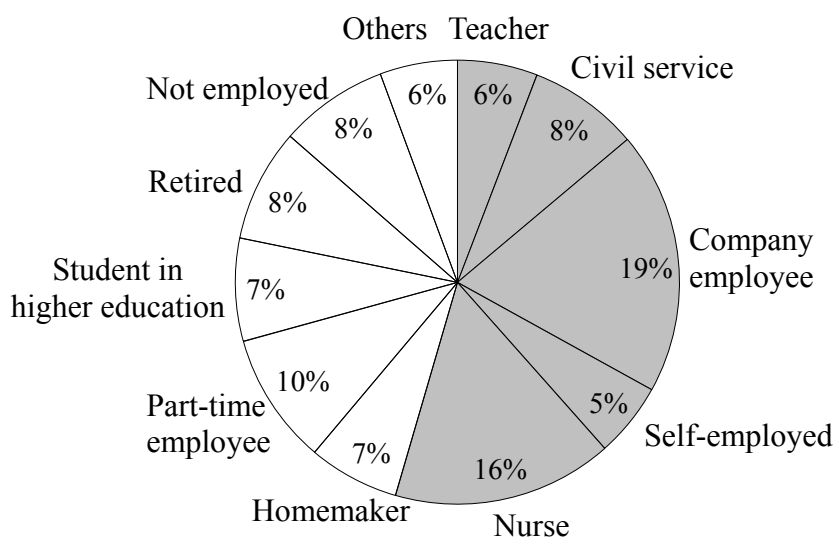


Fig 2: Employment status of students in OUI

recommended to students belonging to Nature and Environment. To understand the concepts of biology, many technical terms should be learned. This makes difficult to understand this course for non-STEM students.

Third reason is development of biological science during these 50 years. 50 years ago, subjects in the textbook of biology for high school were zoology and botany with traditional physiology and cell biology. Molecular biology and ecology were missing. These subjects were included into the curriculum of high school biology 40 years ago. The contents of molecular biology and ecology gradually increase. In present, the molecular biology and ecology with biodiversity are main subjects of high school biology textbook. Thus depending on the date they learned biology, a basic knowledge for biology is different even they correctly remembered subjects they learned in high school. OUI have pre-learning web contents for high school biology, however, this level is comparable to our introductory course. Even a textbook of basic biology course in high school, the level is comparable to biology courses that were taught at first two years in research university 25 year ago.

Conclusion

Comparison the scores of course evaluation among courses are difficult because various factors affect the scores (Stark and Freishtat 2014). Students responding the questionnaire are not the suitable samples of the population. The students got low grades tend to give the low score for the course evaluation. Student can take introductory courses which may not be related to his/her majors. This also leads the low rating because of the difficulty of lectures. In OUJ, elderly peoples tend to give good scores to student course evaluations (OUJ 2015b). This may be related to their spare time. There must be more factors to affect the scores. These factors above are all against to the introductory course.

Several points are found to be checked when the updating of the introductory course in biology will be conducted. One is to improve the video lectures. The students taking this course are too busy to watch video lectures carefully. Therefore video lectures should be addressed to this situation. To the non-major science students, physical, chemical and mathematical explanations should be avoided. Even in biology, technical term will be carefully treated. This is useful even for students who would like to study biology after a long time. A textbook is more critical than other courses. Simple and clear explanations and less technical terms will be expected.

This September, at 2018, renewable this course will be started. In present, I and my colleague are planning how to improve this course. The textbook will be written by Feb 2016 and the TV lectures will be recorded through 2017. I hope this new version will be an effective course for students.

Acknowledgement

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MOTIVATION, LEARNING STRATEGIES AND DISTANCE LEARNERS

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Abstract

Self regulated learning strategies and motivation is important aspects of student learning and academic performance in an educational environment. Adult learners are isolated geographically and lack the necessary time to learn would need a high level of motivation and self-regulatory study skills. This study examined the learning strategies constructs and to investigate the relationship between learning strategies and motivation among postgraduate students. This study also looked at the effects of motivation and self-regulation strategies on academic performance. The study used a modified version of the Motivated Strategies for Learning Questionnaire (MSLQ) as the tool to collect and gather information. The participants comprised students from Wawasan Open University enrolled in the CEMBA programme. A total of 204 students, took part in this study. The analysis was conducted using structural equation modelling. The questionnaire's construct validity was tested using confirmatory factor analysis. Confirmatory factor analysis indicated that a model including factors representing the dimensions self-regulation, and intrinsic value was the best fit. Significant correlations between motivation and learning strategies subscales (self-regulation and cognitive strategies) provided preliminary evidence of predictive validity of the measure. Self-regulation strategy has positive correlation with intrinsic value. Motivation has a positive effect on academic performance. Contrary to general expectation, self-regulation strategy has no significant effect on academic performance.

Keywords: *self-regulation strategies, motivation, adult learning, structural equation modelling*

Introduction

The nature of distance learning is such that one goes through the journey in relative isolation. Learners are provided the necessary resource materials for them to absorb while occasionally attending classes or receiving attention from an instructor. This eventually would put a strain on these learners as the degree of motivation needed to sustain the full attention of the learners is high. Learners who are adequately equipped in the right learning strategies would eventually survive and those who are 'weak' will drop-out (Prakash, 2010).

The evaluation of the students' educational achievement is very important in measuring the extent to which the students achieve the educational objectives guided by the curricula and to improve teaching and learning methods. It is believed that the use of effective learning strategies is an important factor for successful learning and that students may need a variety of strategies to regulate their own learning (Marsh, Hau, Artelt, Baumert, & Peschar, 2006; Zimmerman & Martinez-Pons, 1990).

However, much of the previous research on the learner's academic achievement in relation to motivation and learning strategies focused on a single variable or simply the relevance between them rather than the causal relationship. Therefore, the purpose of this study is to examine the structural causal relationship among these variables to empirically verify their effects on one another using the Structural Equation Modelling (SEM).

Research Questions

The whole study looked at the effects of motivation and learning strategies on academic performance among postgraduate learners. Only one learning strategy was adopted for this study which is self-regulated strategies. Motivation was represented by the intrinsic value factor. In the process of analysing, the relationship between motivation and learning strategies was also investigated. As such the research questions are:

1. Do the constructs of motivation and self-regulating strategies have significant impact on academic performance?
2. Is there a significant relationship between motivation and academic performance?
3. Is there a significant relationship between self-regulating strategies and academic performance?

Literature Review

Although the MSQ questionnaire used contains subscales self-efficacy, intrinsic value, test anxiety, cognitive strategy and self regulation, this study only focused on two subscales representing motivation and learning strategies; intrinsic value and self regulation respectively and their impact on academic performance. There are a number of studies conducted in this area but most of these studies focussed on school students rather than adult learners.

According to self-regulated learning theory, self-regulated learning is an integrated learning process, which occurs when individuals attempt to adjust the characteristics of their own behaviour, motivation, and cognition to best suit their own learning. Pintrich (1999) described self-regulated learning as an active, constructive process whereby learners set goals for their learning plan actions and monitor, regulate and control their cognition, motivation and behaviour.

An important aspect of self-regulated learning theory is that student learning and motivation are interdependent. Their learning strategy enables them to be self-aware, knowledgeable, and decisive in implementing their learning strategies. While in terms of motivation, they possess high self-efficacy, self-attribution and intrinsic task interest. Their self-motivation is also evident in their continuing tendency to set higher learning goals for themselves when they achieve the earlier goals (Zimmerman, 1990). At that level, self-regulated learners are not only self-directed but are self-motivated as well.

According to Pintrich et al. (1991), learning strategies can be classified into cognitive, meta-cognitive, and resource management strategies. In this study, the researcher only used meta-cognitive strategy as part of the theoretical framework. The subscale learning strategy that was used in this study is the self-regulating strategy. Self-regulation is not a mental ability or an academic performance skill; rather it is the self-directive process by which learners transform their mental abilities into academic skills (Zimmerman, 2002).

Learning strategy is not enough to improve student achievement. Students should be motivated to use strategies, and organize cognitions and their efforts (Paris, Lipson, & Wixson, 1983). Motivation is the internal power that drives individuals to act in order to satisfy their desire (Yates, 2004). Paris et al. (1983) suggested that using self-regulated learning strategies promotes students' motivational beliefs. Therefore it is expected that self-regulated learning strategies have some effect on motivation.

Methodology

The proposed model and hypotheses were estimated by using structural equation modelling (SEM), which is a powerful multivariate technique for analysing causal models. As is usually the case, a structural equation modelling composes of a measurement model and a structural model. The measurement model is estimated using confirmatory factor analysis (CFA) to test whether the latent variables possess sufficient construct validity. The structural model is used to present the relations of causal effects between the latent variables and academic performance. The data analysis proceeded with the two-step approach of the structural equation modelling. In this study, the academic performance is the endogenous variable. The exogenous latent variables include meta-cognitive self-regulation and motivation. Figure 1 shows the hypothetical research model.

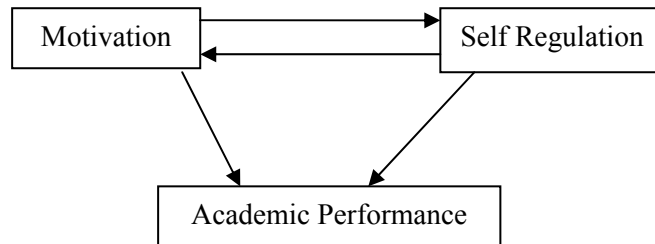


Figure 1: Hypothetical Model

According to Figure 1, there is causal relationship between motivation and self-regulation strategies and academic performance. Both motivation and self-regulation construct are also closely related.

Research Design and Sample

The questionnaires was adopted and adapted from the Motivated Strategies for Learning Questionnaires (MSLQ) originally developed by Pintrich et al. (1991). Each item was measured on a seven-point Likert scale, ranging from not at all true of me (= 1) to very true of me (= 7). For the motivation construct, only the subscale ‘intrinsic value’ was used and for the learning strategies construct, ‘self-regulating strategies’ was used. Some of the items in the questionnaire were modified to reflect the nature of distance learning and adult learners’ experiences. Academic performance was measured using the learners current Cumulative Grade Point Average (CGPA). A two-stage model construction was used to undertake this study. Two measurement models and a structural model were developed.

Sample

Data were collected from Wawasan Open University. The population was sampled by purposive sampling method. The participants in this study were students enrolled in two courses; Economic Environment of Business and Disaster Management of the Commonwealth Executive Master of Business Administration (CEMBA) programme. A total of 300 questionnaires were sent and 204 were returned at a response rate of 68%. For SEM to be properly executed, the sample size should be larger. The researcher suspects model misspecification to occur in this study. Respondents who participated in this study consisted of 102 males (50%) and 102 females (50%). The perfect ratio between male and female students was merely a coincidence. Only students in the second semester onwards were selected for the survey as only they would have had their CGPA score available. The youngest respondent was 24 and the oldest 63. Looking at the profile of the respondents, 114 entered the university via the Regular Entry (with a Bachelor’s degree) mode and the rest (90) through Open Entry (without a Bachelor’s degree). Due to time constraint, this study did not look at the role of age, gender and entry mode have on the relationship between motivation and learning strategy on academic performance.

Data Analysis

To examine causal and structural relationship between the variables, the researcher set the statistical model based on the hypothetical research model as shown in Figure 1. In order to determine the estimation method for the statistical model, AMOS was used to verify the multivariate normal distribution of the measurement variables of the structural equation model and each model's goodness-of-fit and parameters were estimated by the Maximum Likelihood Estimation procedures (see Table 1).

Table 1: Maximum Likelihood Estimates

			Estimate	S.E.	C.R.	P
I8	<---	Motivation	1.000			
I7	<---	Motivation	.862	.059	14.502	***
I6	<---	Motivation	.717	.061	11.828	***
I4	<---	Motivation	.892	.071	12.600	***
I3	<---	Motivation	.834	.059	14.227	***
R4	<---	Regulatory	1.231	.161	7.476	***
R8	<---	Regulatory	1.000			
CGPA	<---	Motivation	.163	.052	3.140	.002

Since the conditions of the normal distribution is satisfied when the average skewness of the measurement variable in SEM is less than 3 and the average kurtosis is less than 10 (Kline, 2005), the basic hypothesis of the multivariate normal distribution is satisfied in this model (see Table 2).

Table 2: Test for Normality

Variable	min	max	skew	c.r.	kurtosis	c.r.
CGPA	1.650	4.000	-1.161	-6.769	1.024	2.984
R8	1.000	5.000	-.615	-3.584	-.195	-.569
R4	2.000	5.000	.197	1.149	-.643	-1.874
I3	2.000	5.000	-.605	-3.525	.083	.242
I4	2.000	5.000	-.402	-2.346	-.445	-1.297
I6	3.000	5.000	-.237	-1.379	-1.117	-3.256
I7	3.000	5.000	-.321	-1.871	-1.312	-3.824
I8	2.000	5.000	-.767	-4.472	.318	.928
Multivariate					3.914	2.210

This model is recursive with a sample size of 204 and chi-square estimates at 22.578 at 15 degrees of freedom. Recursive models assume that all causal effects are represented as unidirectional and no disturbance correlations among endogenous variables with direct effects between them.

Convergent Validity, Discriminant Validity and Reliability

The Cronbach's Alpha of the internal consistency reliability in each variable showed that the intrinsic value subscale consisting of 9 items ($\alpha = 0.864$) and the self regulation subscale consisting of 9 items ($\alpha = 0.555$) are reliable with alpha value within the acceptable range.

All items in the motivation and self regulatory construct showed a high level of convergent validity with all items being significant at the 1% level. Correlation estimates for all the items in both motivation and self-regulatory construct measures a value of less than 0.85. We can conclude that there is discriminant validity between the scales measuring motivation and self regulatory strategies.

The unidimensionality procedure was applied for the whole measurement model to remove the measuring items that have the lower standardised factor loadings (<0.50). The final results revealed only 5 items in the motivation scale and 2 items in the self regulatory scale which demonstrated high unidimensionality (factor loading of > 0.50). The items are highly correlated to the latent construct.

Model Fit

Goodness of Fit (GOF) tests examines the way in which the fixed portions of the model fit the observed data. Once model parameters have been estimated, one would like to retain or reject the hypothesised model. This procedure essentially a statistical hypothesis-testing problem, with the null hypothesis being that the model under consideration fits the data. There are 3 category of fitness which is incremental fits, absolute fits and parsimonious fits. All the goodness-of-fit index of the measurement model were shown to satisfy the standard fit, and since the estimation possibility of the structural model has been theoretically verified, the goodness-of-fit of the research model was tested by the Maximum Likelihood Estimation, proving that it is a statistically proper model as shown in Table 3.

Table 3: Goodness of Fit Index

Name of Index	Requirements	Value	Results
Chi-Square	$p > 0.05$	0.094	Achieved
CFI	≥ 0.90	0.991	Achieved
RMSEA	≤ 0.08	0.050	Achieved
Ratio ChiSq/df	≤ 5.0	1.505	Achieved

Lower values of absolute fit (RMSEA) indicate a better model to data fit and higher values of incremental fit (CFI) indicates a larger improvement over the baseline model fit. The parsimonious fit (ChiSq/df) shows extreme sensitivity to the sample size.

Discussion

Table 4 shows the items related to each latent variable; motivation and self regulatory strategies. It would seem that some items have a stronger relationship with the latent variables than others. In this study, the first 5 items in Table 4 (I8, I7, I6, I4 & I3) are significantly related to the latent variable; motivation. Only the subscale intrinsic value (I) were used in this study. A learner's motivation level would increase if the learner finds the class to be interesting (I8, $r = 0.93$, $p < 0.01$). The ability to learn from one's mistake also increases the learner's motivation level (I6, $r = 0.69$, $p < 0.01$).

Table 4: Questionnaire Items & Standardised Regression Weights

Items	Estimate
I8 <--- I think that what we are learning in this class is interesting	.933
I7 <--- I think that what we are learning in this class is useful to know	.778
I6 <--- Even when I do poorly on a test I try to learn from my mistakes	.694
I4 <--- I think I will be able to use what I learn in this class in other classes	.729
I3 <--- I like what I am learning in this class	.779
R4 <--- Even when study materials are dull and uninteresting, I keep working until I finish	1.000
R8 <--- When I'm reading I stop once in a while and go over what I have read	.696

As for learning strategies, only two of items in the questionnaire were significantly related to the latent variable, self regulatory strategies. These were item R4 (keep working hard) and R8 (re-reading materials). In this construct, the ability to work hard ($r = 1$, $p < 0.01$) increases the learner's self-regulatory learning strategy used. It was also found that learners tend to re-read their materials half way through reading ($r = 0.696$, $p < 0.01$). In a study by Dunsloky et al (2013), it was found that re-reading materials was not a popular strategy among high school students as opposed to practice exercises as a strategy. There is a possibility that adult learners especially those who might have left formal schooling for some time would prefer an archaic form of studying; re-reading and memorising. This was reaffirmed in a study conducted by Prakash (2013) in Malaysia where adult learners in an open and distance learning institution would rather spend time reading and re-reading than spending time performing task-based exercises.

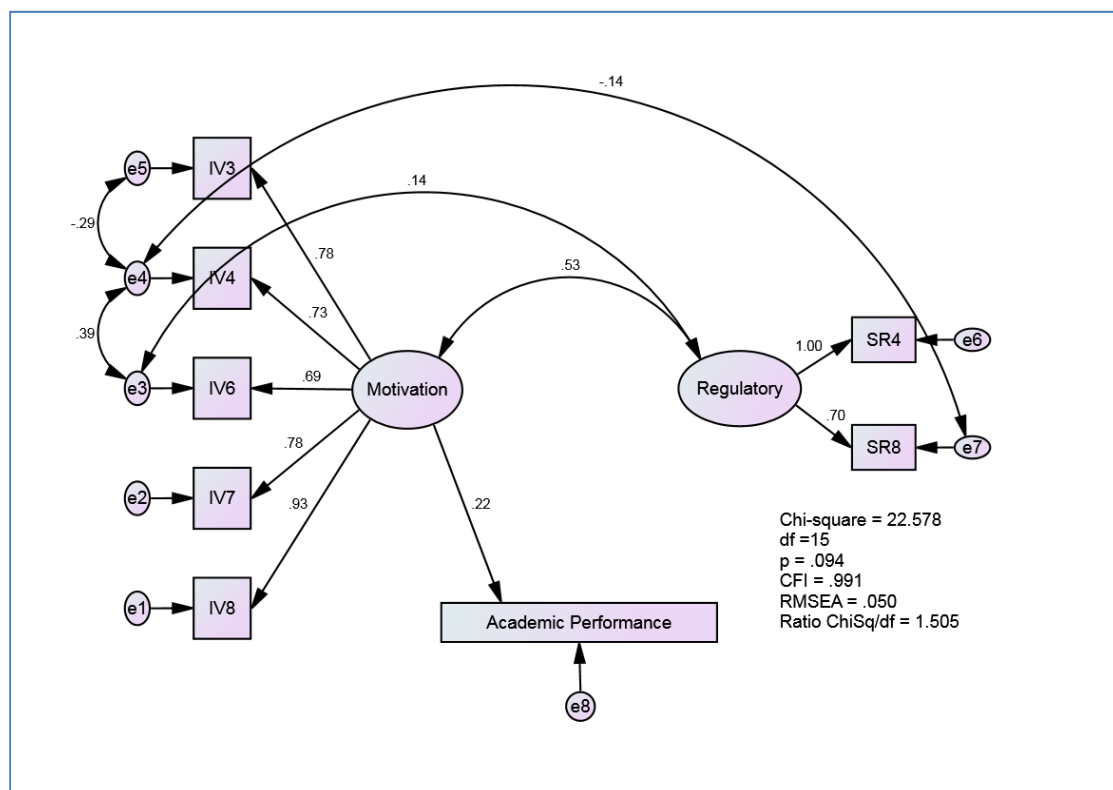


Figure 2: The Final Model

The final structural model in Figure 2 shows that there is causal relationship between motivation and academic performance but no significant relationship between self regulation strategies and academic performance. The path between regulatory construct and academic performance was removed during the model fitting process. All the items listed (IV3, IV4, IV6, IV7 and IV8) significantly represent the concept of motivation. Both SR4 and SR8 significantly represent the concept of self regulation (regulatory).

There was no conclusive evidence to suggest that self regulatory learning strategies have a significant impact on academic performance among these postgraduate students. This is contrary to the findings in most research studies. However, there is a correlation between motivation and self regulation learning strategies. The study also showed a significant but weak relationship ($r = 0.14$, $p < 0.01$) between learning from mistakes (IV6) and self regulation (regulatory) strategy. Learning from one's mistake can also be a good strategy to use to improve the learning curve (Cowan, 1984).

Motivation has a positive effect on academic performance. An increase in motivation among the postgraduate students translates into an increase in CGPA by 0.22 points. Pintrich and De Groot (1990) found that intrinsic motivation plays a mediational role in academic performance and that a strong correlation exists between students' intrinsic value and their cognitive strategies and self-regulation uses. In other words, students who were interested in learning the material for its own sake and thought it was 'interesting' and 'useful to know' ended up using various cognitive and self-regulating strategies, which had a positive influence on their academic performance. This is in line with our earlier conclusion that learner's who found the class interesting and learnt useful knowledge tend to have higher levels of motivation.

Conclusion

This study started as a preliminary work on the impact of motivation and self-regulating strategies on academic performance. Based on the findings, it would seem that self-regulated strategies and motivation appear to play an essential role on the academic achievement of adult learners. Individuals seem to do better when they feel confident in their abilities, self-regulate their learning, and sustain high motivational levels.

One of the premises of this study was that most of the factors in the motivation components would be significantly correlated with the self-regulated learning components. This study manages to confirm the relationship between learning strategies and motivation albeit among postgraduate students at least. Most studies in this area (see Paris et al, 1983 and Zimmerman, 2002) also conclude that motivation has a positive influence on academic performance. This was also demonstrated in the preliminary findings of this piece. However, this study found no evidence of the relationship between self-regulating strategies and academic performance. Future research would be done to re-look at this phenomenon. Future studies would also be conducted with larger sample size to avoid model misspecification.

That said, adults are unlikely to achieve their academic goals when they are uninterested or not motivated to take part in the learning process, doubt their own competence, and do not know how to cognitively monitor their learning or choose not to do so. In addition, they may experience difficulties coping with various challenges that they might encounter and might easily give up when they repeatedly confront failure (Prakash, 2010).

Therefore, it may be of importance that adult educators assess the use of self-regulatory strategies, and motivational levels of adult learners, not only at the start of the educational programme, but also at various intervals throughout the academic journey during which they can provide the learners with the necessary feedback to revitalize the interaction among these factors so that learners are able to reach their best academic potential.

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LEADERSHIP STYLES IN ODL AND THEIR IMPACT ON FOLLOWERS' PERFORMANCE

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Abstract

Distance learning offers same benefits as traditional learning but it is different from conventional learning because of its ever changing environment. So is the case of Leadership in distance learning institutions, it plays the same role as of conventional learning institutions but perhaps it is more diverse and complex than other organizations. New advances are taking place in distance education rapidly. Therefore, the leaders of ODL are also expected to have certain traits or styles that could help them in coping with this change. Strong vision of future, creativity, adaptability of change or working as change agent, effective communication with peers, subordinates and students are few important traits expected from leaders of ODL. Although researchers have been successfully identified the traits of leaders but still many of leadership areas in distance learning are under explored. This study is an effort to explore the complexity of leadership in ODL by identifying the leadership styles influencing the job performance. This research explored that Management by exception and Laissez faire style of leadership is prevailing in the selected ODL institution but transformational leadership is not very prominent leadership style here. Moreover, the prevailing leadership styles have very little or no impact on the performance of subordinates.

Key words: Leadership Styles, Job performance, Leadership in ODL

Introduction

Leadership has always been the important topic of interest in all fields of life whether it is manufacturing, service, education or a country, so is the leadership styles. The use of appropriate leadership style has long been a topic of discussion by both scholars as well as practitioners. Development of better and accurate leadership style according to the organizational environment is becoming more and more important with each passing day. Absolute importance of Leadership role in education sector is very much evident. Education world of today is information and communication based and IT professionals are needed to be endowed with abilities, skills and knowledge. Information Technology (IT) has revolutionized the education sector. Today a student do not have to pay to study or get a certificate, Open Educational Resources (OER) have facilitated students to get the knowledge they desire. In this situation the leadership role of ODL instructor have become indispensable for the appropriate and essential empowerment.

Although distance education is an important sector of higher education with increasing growth potential but only few studies have focused on leadership in distance education (Beaudoin, 2002). Otto Peters was the first person who highlighted the role of leadership distance education (Peters & Keegan, 1994). The purpose of this paper is to better understand the role of leadership in distance education and its impact on employee performance.

Objectives of the Study

Following are the objectives of the study:

- To identify the leadership styles prevailing in ODL institutions
- To measure the performance of employees working in ODL institutions
- To find the relationship between leadership styles and employee performance

Research Question

- What are the leadership styles of team leaders working in ODL institutions?
- What is the performance level of employees working in ODL institutions?
- How leadership styles impact the performance of employees in ODL?

Literature Review

Beaudoin (2003) and Irlbeck and Pucel (2000) found that leadership in distance education is comparatively new area and only a small fragment of research is devoted to it specially in higher education.

Wiggins (2011) defined distance education leader as “a person in a higher education institution who has the responsibility for overseeing or directing all institutional DE (Distance education) programs and activities, including managing courses and/or degree programs, providing vision, and motivating others under his/her supervision to achieve the desired results within his/her sphere of authority”. Pahal (1999) described the qualities of IT leader and said that he should be a proactive leader, a self-achiever and a role model. Higher education DE leader performs many roles as he has to work in an evolving field that operates in a fast changing environment (Nworie, Haughton, & Oprandi, 2012). A number of theories have been developed to describe leadership including transformational, transactional, servant leadership or charismatic leadership but their implications in open distance learning were not discussed much until Nwori (2012) provided the application of different theories on DE leadership. He discussed different theories including Transformational Leadership Theory, Situational Leadership Theory, Complexity Leadership Theory and Systems Thinking. He concluded that a number of theories can be used by a leader according to the personality of the leader and the situation he is dealing with. For the further implications of leadership theories the researcher will study the leadership style prevailing in the higher education institution of Pakistan.

Leadership style along with other variables also impact employee (subordinates) performance. Different authors have presented different leadership styles to enhance employee performance. Todowede (2009) described a number of tasks of leaders to enhance subordinate performance including motivation, staff development and understanding the ability of employee. He also concluded that a blend of leadership styles will enhance employee performance. . Howell and Hall (1999) found the impact of transformational leadership, contingent reward leadership, active and passive management by exception and LMX on reward performance.

Although impact of leadership styles on employee performance have been discussed in a number of different researches but little research has been made in distance education sector. To fill this gap researcher of this paper will study the impact of leadership styles on employee performance in open distance learning.

Methods

To collect data different supervisors and instructors of management sciences department of an open distance learning university were contacted. One of the reasons for choosing this department was that they are offering course of “leadership” to their students and course is also available on its Open courseware website for instructors as well. Thorough study of the course available as an OER of the university showed that all elements of leadership have been covered in its course outline.

Data was collected in two steps, at first supervisors were asked to evaluate the performance of their subordinates. To measure the performance IRB scale Williams & Anderson (1991) was used. In second stage the subordinates were asked to measure the leadership style of their supervisor. To measure leadership styles MLQ Bass & Avolio, (1990) was used.

Data Analysis

Leadership styles of supervisors were measured on 3 levels transformational, transactional and Laissez faire leadership styles. All supervisors showed a variety of leadership styles. Leadership style was measured on 7 factors Idealized Influence, Inspirational Motivation, Intellectual Stimulation, Individualized Consideration measuring transformational leadership. Contingent Reward, Management-by-exception measured elements of transactional leadership and Laissez-faire Leadership to measure passive avoidant style of leaders. Leadership style was measured by calculating the means. Following scale was used to measure the level of a factor in leadership of supervisors:

High = 9-12

Moderate = 5-8

Low = 0-4

Idealized Influence depicts the trust, faith and respect held by subordinates for his leader. A leader high on this element shows dedication, respond to the hopes of his subordinates and act as a role model. All the supervisors were judged to be moderate on this factor with **5.3 mean**. No one was acting as a role model but element of faith was at expectable level.

Inspirational motivation indicates the level to which a leader provides a vision, always helps his subordinates in completion of their tasks and make them feel that their work is important. This factor also prevails at moderate level in the supervisors of ODL having **5.7 mean**. Supervisors only fulfill the inspirational role by helping their subordinates in the completion of their tasks but they have no significance role in cultivating the vision.

Intellectual stimulation deals with encouraging subordinates to innovate and come up with creative solutions. This factor was lacking in the supervisors in ODL. the overall mean of this factor is 3.9.

Individualized consideration measures the interest of a leader in the well-being of his followers by assigning them individual projects and paying attention to those who seem less involved in group activity. All supervisors were also lacking in this area with mean of 3.5 and rarely bother to give attention to those who seem rejected.

Contingent reward is an element of transactional leadership that deals with the extent to which a leader tells his subordinates what to do to get rewarded. This factor was also not very prominent with the mean of **3.6**.

Management by exception is the most prominent factor in the supervisors of ODL with a mean of **9 mean**. Management by exception says that let them do their task and do not interfere unless something is wrong.

Laissez faire is a passive avoidant behavior. When a leader expects least from his followers and is content to let things ride. This behavior is also very prominent in the supervisors with **9.1 mean**

Performance of subordinates was measured by the supervisors through IRB questionnaires. No particular pattern was found in the performance results of subordinates. All subordinates gave good evaluations of their subordinates. All of them were lying between 3 to 4 where 4 is strongly agree means good performance.

Discussion

Overall subordinates are moderate to weak on the dimensions of transformational leadership. Idealized Influence and Inspirational motivation is present at moderate level but intellectual stimulation and individualized consideration are not practiced by the supervisors.

Leaders are lacking in intellectual stimulation it means supervisors follow the set rules and procedures and ask subordinates to follow them as well. They do not encourage them to innovate. Subordinates who come up with new ideas are self-motivated and their supervisors have very little or no contribution in it. Individualized consideration is also not provided by the supervisors as they believe that every subordinate is responsible for his own task and if he will not pay attention to his assigned duties he should be punished as per rules. It indicates that transformational leadership is not being practiced at ODL. The reason is that all supervisors and subordinates are required to fulfill assigned tasks for example; assignment making, students' interactions and they are only asked to perform these assigned tasks efficiently. That leads them towards transactional and laissez fair leadership because everyone knows what is expected from him/her and nothing more will be asked nor acknowledged.

That is why the performance of subordinates has no relationship with leadership styles. Usually it is said that transformational leadership have positive impact on employee performance but passive avoidant leader has no influence on his followers as the result followers feel no completion to exceed expectations as it is hard to develop any bond. Moreover, leaders are playing more of a managers' role than a leader.

Conclusion

The prominent leadership style here is a mixture of transactional and laissez- faire where employees are guided about the rules, told them the expectations and let them do their tasks. Leaders do not interrupt in their tasks unless they are fulfilling their goals and everything is going smoothly. That is why leadership style has no impact on the performance of subordinates. Usually organizational structures appears to be relatively static and gradually accommodate the change (Beaudoin, 2002) that can be one reason of less importance of transformational leadership in ODL.

Implications

During research it was found that only few supervisors have taken any course of leadership available as an OER. Organizations can motivate their employees to consult the material (lectures, handouts) on leadership available on its open courseware website to work effectively. And educational institutions should also play its role in enriching their OER with relevant and rich content. Open distance learning is gateway to societal success due to emergence of tech era. As education is necessary for the development and well-being of society so it is important that motivated learners get open resources from where they can learn quality and boundary less education. The content studied in this paper is also taken from OER. It is recommended to academic stakeholders to study the leadership styles from the lessons available at the mentioned below link (OER) which can help in understanding this article comprehensively.

<http://ocw.vu.edu.pk/Videos.aspx?cat=Management&course=MGMT623>

Limitations

Data was collected from 1 department of institutional, so the results cannot be generalized. Moreover subjectivity of supervisors and subordinates is also expected to impact the results. For generalizability of findings in future, data can be collected from different departments and advanced statistical analysis may be used.

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MOTIVATIONAL ISSUES OF FACULTY IN ODL: A STUDY OF DEVELOPING COUNTRY

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Abstract

Open and Distance learning education system is different and beneficial from conventional education system in many ways due to its cost-effectiveness, flexibility, and freedom in study timing and place. Well-trained and motivated faculty plays a critical role in the success of online distance learning system. Due to the different nature of ODL as compared to traditional class teaching, faculty often faces different challenges and their motivational factors/issues may also differ. Motivational issues have been studied in many different contexts. Many studies have been conducted on motivational issues of corporate sector employees but motivational issues of academic faculty are different from those of corporate employees. Motivation not only energizes individual behaviors but also is a vital contributor in job satisfaction of an employee. Motivation is important for teachers as it affects their performance and resultantly teacher's performance affects the performance of students which is the ultimate aim of educational system. Since various motivational factors have different effect on different people and it varies with the nature of organization as well which makes it imperative to study the motivational issues of ODL faculty in developing countries. This study aims to dig out the issues related to faculty motivation so that by catering and focusing such issues performance of ODL system can be improved. Data will be collected from open and distance education institution in Pakistan using questionnaire. The study results show that faculties in distance education are mostly intrinsically motivated but they face issues in extrinsic motivational factor.

Keywords: Motivational issues, ODL faculty

Introduction

For any educational institute, the importance of students is well acknowledged. For equipping the student with knowledge and capabilities, various resources like physical, financial and human are deployed by Universities both traditional and online. In Open and Distance learning (ODL) set-up, technology can be categorized as a separate resource considering its importance yet human resource has the privilege of utilizing and aligning all these resources for the benefit of students. Among human resources, one factor that is crucial for the success and integration of other resources at ODL is; faculty, who actually imparts knowledge to the students and transform them to be a useful and contributing member of society at large. Since the role of faculty is instrumental in the success of open and distance education, therefore, their motivation level is important for the success of the distance learning program.

Open and Distance learning system is different and beneficial from conventional education system in many ways due to its cost-effectiveness, flexibility, and freedom in study timing and place. It also differs not only in terms of patterns of communication and dependence on the means of communication but also in terms of organizing the educational function.

Well-trained and motivated faculty plays a critical role in the success of online distance learning system. Due to the different nature of ODL as compared to traditional class teaching, faculty often faces different challenges and their motivational factors/issues may also differ. Faculty satisfaction and motivation are therefore critical for enhancing students learning experience. Teachers who are demotivated and have low self-esteem raise a question mark on quality of education being imparted. Different factors like technology, media and students etc. have been studied in several researches yet; faculty of distance education is still a neglected area.

Many studies have been conducted on motivational issues of corporate sector employees but motivational issues of academic faculty are different from those of corporate employees. Moreover, motivational factors of ODL faculty differ from conventional educational institutions due to diverse and ever-changing environment of ODL education system. Motivation is important for teachers as it affects their performance and resultantly teacher's performance affects the performance of students which is the ultimate aim of educational system but limited studies have addressed what motivates faculty. ODL education in developing countries has not yet reached maturity and is continually evolving and improving so there are many issues in the motivation of teachers. This study aims to dig out the issues related to motivation of faculty so that by focusing those issues, suggestions can be provided how to cater in such a way that performance of ODL system can be improved.

Research Objectives

1. To explore different factor relating to faculty motivation
2. To identify motivational issues among faculty

Literature Review and Operationalization

Humans are the important and integral resource for any organization and their motivation to accomplish organizational goals is serious concern for organizations (Muhammad Imran Rasheed, 2010). Motivation is a force that enables person to achieve set goal. Motivation is concerned with person's course of actions and behaviors to pursue a certain destined goal followed by valued rewards (Armstrong & Baron, 2002). In broader terms motivation is defined as a characteristic that moves individual to either do or not to do something (Broussard & Garrison, 2004).

Theoretically, Arnold, Robertson, and Cooper (1991) defined motivation by describing three components; direction – goal, effort – required action and behavior and persistence – steadfastness in course of actions. Employee motivation refers to the force that enables employee to achieve organizational goals (Cook, Ley, Crawford, & Warner, 2009). Motivation is further divided into two categories; intrinsic motivation and extrinsic motivation (Lai, 2011). Intrinsic motivation refers to self-generated factors that influence individual's behavior towards certain target such as; personal goal setting, personal engagement and interest towards goal, personal fulfillment, self-actualization etc. Extrinsic motivation is the motivation which is governed by external reinforcement contingencies that include pay, rewards, recognition, feedback, job design, working environment and career development programs (Armstrong & Baron, 2002; Lai, 2011). Organizational goals vary depending upon their purpose of existence and hence people may have different motivating factors in different organizations they work in. The study aims to discuss the motivating factors of teaching faculty working in higher education institute of open and distance learning (ODL) environment.

Researchers in different studies identified that certain factors regarding faculty motivation are affected by different variables i.e. some faculty are intrinsically motivated such as personal fulfillment while some may find extrinsic factors, such as pay, more motivating (Hsieh, 2007). The motivating factors in higher education have deep impact on faculty morale that affect overall teaching performance (Cook et al., 2009). According to Muhammad Imran Rasheed (2010), key motivating factors among faculty in higher education institutes, belong to traditional learning, are job design, work environment,

empowerment and participation in decision making. However, Motivational issues faced by faculty of conventional learning environment include lack of monetary and non-monetary rewards, lack of recognition and moral support (Cader & Anthony, 2014).

The faculty of open and distance learning (ODL) deliver education in altogether different environment hence their level of motivation and issues, if any, may be different.

University of London claims to be the pioneer in distance learning by offering distance education degrees in year 1858 (Qureshi & Shah, 2014) but mainly distance learning institutes emerged in post 1980s in USA, Australia and other western countries (Aderinoye & Ojokheta, 2004) and with the passage of time and technological advancements they have become fast growing education institutes in USA (Bolliger & Wasilik, 2009). The trend of open and distance learning in Pakistan is also increasing rapidly by the common practice of ICT (information and communication technology) in education (Bughio, Abro, & Rashdi, 2014). Many definition of distance education exists yet there is lack of single universally accepted definition (Dillon & Walsh, 1992). Hence, the commonly used definitions in literature have been considered in this study. The open and distance learning is field of education that aims to provide teaching to students in non-traditional setting e.g. classroom (Qureshi & Shah, 2014). Miller and Honeyman (1993) described such education as a process in which learning makes accessible to those learners who are separated by distance, time or both via internet based learning and technologies (Curran, 2008). Moore and Kearsley (1996) also defined distance learning as learning environment in which teachers deliver education to students who are apart by time and geography. Providing learning in such an environment is exciting as well as challenging for ODL faculty as they are the core persons who make learners motivated by sitting miles away via ICT (Cook et al., 2009). Before motivating students to learn it is important for faculty to be intrinsically and extrinsically motivated and according to Schifter (2000), motivating factors that influence faculty to be actively participative are important concern for research. Cook et al. (2009) discussed that intrinsic motivation is important to teach students but extrinsic motivating factors play a significant role to increase ODL faculty participation and fulfillment of their physiological needs.

Different researchers have explored and discussed intrinsic and extrinsic motivators and inhibitors among faculty in ODL. The factors that affect faculty attitude positively towards distance education are institutional support, control over teaching process (Dillon & Walsh, 1992) accessibility of new population of learners (Connie L. Dillon, 1992; Cook et al., 2009), intellectual challenge (Bolliger & Wasilik, 2009; Parker, 2003), recognition, career and research development opportunities (Bolliger & Wasilik, 2009), increased student interest (Cook et al., 2009), self-satisfaction, flexible location and monetary stipends (Parker, 2003). Studies have also discussed motivational issues faced by faculty in ODL, these factors in studies include less student interaction, additional workload (Bolliger & Wasilik, 2009; Dillon & Walsh, 1992), lack of institutional support, lack of encouragement, lack of grants and merit pay, lack of training, lack of relevance towards faculty's discipline (Cook et al., 2009) and job burnout due to demanding and complex nature of job (Parker, 2003).

Employee motivation is measured in this study by intrinsic and extrinsic factors identified in literature. The dimensions used to measure intrinsic motivation are job satisfaction and personal engagement while dimensions to measure extrinsic motivations are taken as; recognition, income and benefits, feedback, career and research development opportunities, job design and work environment.

Methodology

Purpose of study was to gather data about the motivational issues of ODL faculty and explore which factors influencing motivation of faculty. This is a cross-sectional study conducted in non-contrived study setting. Non-probability convenience sampling was used to gather data. Data was collected from distance education faculty by using questionnaire having both close and open ended questions. Questionnaire was floated to maximum faculty members and 60 complete responses were received hence, sample size was taken as 60 in this study for final data analysis. There were two parts of

questionnaire; one contained 35 close ended items that measured motivation and other part contained 3 open ended questions that explore motivational issues. SPSS was used to analyze the data in this study. However open ended statements have been analyzed qualitatively. Issues have been observed and segregated in different themes/dimensions.

Data Analysis

For current study, motivational factors have been measured on the basis of seven dimensions categorized as intrinsic and extrinsic factors.

Table 1

Descriptive analysis of motivational factors (N = 50)

Elements	Mean
Job satisfaction	3.105
Personal engagement	3.15
Recognition	2.615
Income and benefits	3.125
Feedback	2.953
Career and research development	2.548
Job design	2.02
Work environment	2.988
Motivation	2.801

(Table-1) depicts the mean of motivation that is 2.801 which shows that the faculty has experienced motivation at disagree level of likert scale from which we can interpret that motivation is low among faculty. Further the mean values of intrinsic factors (Job satisfaction = 3.105 and Personal engagement=3.15) show that faculty shows inclination towards agreement on these factors i.e. They are experiencing motivation which is moving towards agree level from neutral level. Also the income and benefit mean value show that salary and other benefits are a source of some motivation as the mean is 3.125, it indicate that faculty is not facing much issue in the area of salary and compensation etc.

The mean value of recognition, feedback, work environment and Career and research development are 2.615, 2.953, 2.988 and 2.548 respectively which indicates the concerns of faculty on these issue, though faculty do not show strong demotivation on these dimensions but their lack of motivation is supported. Job design is the factor that has a mean value of 2.02 which is lowest and indicates that it is factor where faculty is facing maximum issue. This is also highlighted in the open ended questions as well.

Findings and Conclusion

On exploring intrinsic issues of motivation, it is found that these factors motivate teachers in ODL to perform. They are motivated with the job engagement and job satisfaction which shows at the intrinsic level of motivational factors, they are no issues as the faculty shows agreement in these dimensions.

The results show that faculty is facing issues in most of the extrinsic factors. The survey findings are that faculty considers recognition, feedback, career development (training and research), job design and work environment as issuing factors causing demotivation while salary and compensations are motivating extrinsic factors of this study. In Pakistan, being developing country, people are high concerned about their salary and additional monetary as for them salary, allowance and compensation benefits are important for supporting their livelihood. The responses in open ended questions shows

that faculty consider their salary as motivating as supported by (Hsieh, 2007) but they believe that salary must be raised in accordance with the inflationary factors and salary increments must be given on regular basis. Only one teacher reported that the salary increase is long overdue which is because of the adhoc employment basis.

Among the demotivating extrinsic factor, work load, lack of face to face interaction, long job timing or overall work hours, exploitation of juniors, monotonous work, work stress, no engagement in curriculum designing and scheduling the semester, unequal distributing of work in term of student allocation specifically, lack of proper semester breaks, flexible work timing and work from home option are related to job design. These factors have repeated been highlighted by faculty as issues of concern in their motivation level which support the findings of (Armstrong & Baron, 2002; Lai, 2011; Muhammad Imran Rasheed, 2010). Other factor related to job design reported as influencing the faculty motivation include absence of summer vacations, lack of flexible work timing and exploitation of junior members or team members.

One of the most rewarding factors for an ODL faculty is recognition and appreciation which leads faculty towards high performance and is effective for motivation. This is supported by the research of (Cader & Anthony, 2014). The results show that faculty is not satisfied with recognition and appreciation system. They believe that there is almost no recognition and reward system only appreciation letter are given with no monetary rewards for performance or achievement. Even few reported that recognition must not be biased but be based on performance. Lack of appreciated in terms of acknowledgement and monetary rewards for work is discouraging and may lead to quitting intensions in faculty. Lack of recognition from students due to no interaction between faculty and student is another factor contributing towards demotivation. Most of the faculty members consider that University should award appreciation letters to high performers.

As per the results of the study, work environment is also an integral factor that is among the motivational issues as reported by faculty as supported by (Muhammad Imran Rasheed, 2010). Faculty reports that demotivation is caused by unavailability of any canteen for faculty, lack of peaceful dining area and proper day care center facility for female faculty members. Most of the faculty members reported that the sitting arrangement is inappropriate attributing it to various factors like noisy floor, lack of privacy and inappropriate lightening on the floor. Faculty demands that privacy must be provided to enhance the working and performance of teachers. Few members highlighted lack of physical library within premises. Library or reading resources are an important ingredient for academic institutes whose important cannot be overlooked.

Many faculty members showed concerns about career development issues and rendered it as a significant demotivating issue endorsed by the research of (Bolliger & Wasilik, 2009). Promotion criteria are not available. Faculty mentioned that most of them are working on the same designation for years and years without any chance to grow up the professional ladder. Faculty reported lack of scholarships, unavailability of online library, no spare time for research work, no monetary reward or support for higher studies not even study leave for morning classes as career development issues affecting faculty. One of the teacher reported that the only admirable measure is the permission for doing research work, attending conferences and encouragement for research publications. Some members mentioned that University is conducting workshops and seminars to enhance the research skills of their employees, also providing chance to participate in conference by sharing information but research grants are given only for local conference. Few training programs are conducted and chance to participate in training programs is not same for all. They feel the need of consistent training programs at different levels for their professional development. Many faculty members complained about biasness in selecting members for training. Muhammad Imran Rasheed (2010) also support that the importance of training for the development and growth of faculty as it gives motivation to work effectively by refreshes their skills and knowledge.

Feedback is very important for enhancing the performance of any individual. Feedback not only influences the motivation of teacher but also help them to perform better. The main concern of most of the faculty members is that performance appraisal is done only by one person which gets very biased at times. They also indicated that feedback of the students is very critical for teachers but it is provided at completion of the course when the teachers cannot bring any change in case student feedback is not positive about the teaching. It is a bigger flaw consider by teacher in comparison to conventional universities where teacher get the feedback of the student right there in the classroom. They believed that their good work must be appreciated and praised at the time of accomplishment and any mistake done must be corrected timely. This is only possible if the feedback is timely provided. Few of the teachers mentioned that their seniors or team heads almost do not provide any feedback about the activities that they are performing which is highly demotivating for them. This also shows that they are not fulfilling their job responsibilities, therefore, many teachers proposed 360 degree feedback as a solution to such issues.

The results showed certain new dimension or factors identified by teachers leading to demotivation, rusting of personal skills and interpersonal relationships. Empowerment supported by (Muhammad Imran Rasheed, 2010) and self-actualization (Parker, 2003) are considered important contributor towards faculty motivation as teachers draw attention towards such factors as effecting their motivation.

They notified that lack of participation in decision making at policy making issues, operational issues as well as functional issues are demotivating factors for the teachers in higher education. They do not have any discretion to plan their course content and schedule their course activities rather teachers are bound to follow the subject schedules designed by others. Even one of the faculty member reported that they cannot show their creativity in developing semester activities and implementing different ideas at instructor level are out of their domain. Uniform policy is applied in this regard which kills teachers' creativity cause motivation level to be low as reported by one of the teachers. Another study (Muhammad Imran Rasheed, 2010) showed similar results that faculty demands empowerment in planning and deploying their own method of teaching in classes by design their subjects and its course outline without involvement of team heads or department head.

Few faculty members highlighted self-actualization as critical factor as a motivator for teachers and reported prestige and self-esteem as a missing element in distance education which is supported by (Parker, 2003).

Interpersonal relations comprising lack of knowledge sharing among faculty members along with lack of respect and friendly behaviors of employees with each other is also notified by some of the teachers as motivational issue for distance education faculty. This is not a common factor of motivation previously studied along with this another promising factor identified in this study is rusting of personal skills. Faculty feel highly demotivated about the deterioration of their personal skills. They reported that teachers' communication skills become weak due to lack of face to face student interaction and also because they are not required to reply the student's query there and then as it is done in traditional set-up. It also slows down the learning process of faculty. Lack of confidence and decision making abilities are also attributed to decreasing the personal skill set and faculty cannot do anything as university management is not taking any measure so that teachers may sustain such valuable skills. Few members reported that workshops and presentations arranged by faculty members for other colleagues is a positive point for enhancing communication skills and confidence. But such steps are not taken as seriously as demanded.

Conclusion

The aim of the study was to identify various motivational issues of faculty in distance higher education. From the study results, it can be inferred that faculty in distance education are mostly intrinsically motivated but they face issues in extrinsic motivational factors. Most of the issues identified in this study are similar to existing issues in literature which shows that motivational issues are the same across various cultures. Two factors; rusting of personal skills and interpersonal relationships are identified in this study which are not supported by literature and are new in this study.

Implication

The study shows that online university faculty is facing issues in their motivation and management of the university must take serious steps to resolve such issues by providing and formulating friendly policies. In order to reduce the issues, proper measures must be taken by top management as faculty is the most fundamental resource of a university and plays a phenomenal role in improving the performance of students.

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PROFESSIONAL DEVELOPMENT THROUGH REFLECTIVE PRACTICE: POSSIBILITIES AND CHALLENGES

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Abstract

Reflective thinking is one of the higher order thinking skills which is considered as an essential competency for professional development. Often, teachers tend to make decisions during their professional practices without understanding the rationale behind those decisions. Reflective practice can be an important tool in practice-based professional learning settings where people learn from their own professional experiences, rather than just from formal learning or knowledge transfer. It could be considered a most important strategy of personal and professional development and improvement. It is also an important way to bring together theory and practice, since through reflection a person is able to see and label forms of thought and theory within the context of his or her work. Learning portfolio development has become a favourite tool to encourage reflective practice in teacher education programmes. Activities to promote reflections are increasingly being incorporated into undergraduate and postgraduate teacher education programmes. The Faculty of Education of the Open University of Sri Lanka introduced compiling of a learning portfolio in its Master of Arts in Teacher Education (MATE) programme with the intention of enhancing reflective practices among teacher educators for their professional development. This study examined to what extent reflective practice supported the teacher educators in their professional development, and challenges faced during the process. Quantitative and qualitative research strategies were used in this study within a framework of a survey research design. Eighty four (84) students registered for the MATE programme in year 2012/ 2013 were selected as the sample to collect data through a questionnaire. In order to get responses from teacher educators the questionnaire was arranged under three key areas - benefits gained by reflective practice, essential skills developed through the reflective practice and difficulties faced during the reflective practice. Results revealed that a majority of the teacher educators (57.1%) faced problems in writing reflections in a critical and analytical manner and they faced difficulties in developing essential skills needed for this. Teacher educators need adequate guidance and constant support to effectively engage in reflective practice for their professional development.

Key words: *Reflective Practice, Professional Development, Teacher Educators*

Introduction

The Faculty of Education of Open University of Sri Lanka introduced compiling of a learning portfolio in its Master of Arts in Teacher Education (MATE) programme with the intention of enhancing reflective practices among teacher educators for their professional development. The MATE programme was initially started in the year 2000 and up to now seven batches of students has followed the programme. For the first five batches the curriculum comprised two parts, namely, Part I and Part II and included Professional Courses, Support Courses, Continuing Education Courses and Discipline Based Courses. In the programme evaluation study conducted by the Dept. of Secondary and Tertiary Education (STE) in collaboration with Commonwealth of Learning (COL) in 2004, it was revealed that the Discipline Based Courses and some of the Support Courses were not fulfilling the objectives of the programme and needed significant modification. Therefore in 2007 two new

courses were introduced to the programme under professional courses titled Contemporary Issues in Education and the Learning Portfolio.

The main aim of introducing a course on learning portfolio was to encourage students to critically reflect on the achievement of intended learning outcomes of each course in the study programme. Since 2007 about 116 students have completed the MATE programme and at present 84 students are enrolled in the programme.

Learning portfolio is a rich, flexible document that engages students in continuous, thoughtful analysis of their learning. Learning portfolio development has become a favourite tool to encourage reflective practice in teacher education programmes. Activities to promote reflections are increasingly being incorporated into undergraduate and postgraduate teacher education programmes. Completion of a learning portfolio promotes reflective learning of students. Its goal is to build and nurture a culture of critical reflection on the work that teacher educators do on a regular basis, in order to be able to learn from challenges met, successes achieved and mistakes made (Lekamge & Karunanayaka, 2007). It has been revealed that the introduction of learning portfolio component to the professional development programme for teacher educators has made a great impact on their learning as well as their professional activities (Lekamge & Karunanayaka, 2007).

Literature Review

The term reflection, as mentioned by Dewey (1933), is requiring teachers to take reflective action that entails “active, persistent, and careful consideration of any belief or supposed form of knowledge in light of the grounds that support it and the further consequences to which it leads”. Dewey identified three attributes of reflective individuals, which are still important for teachers today: open-mindedness, responsibility, and wholeheartedness. Open-mindedness is a desire to listen to more than one side of an issue and to give attention to alternative views. Responsibility involves careful consideration of the consequences to which an action leads. Wholeheartedness implies that teachers can overcome fears and uncertainties to critically evaluate their practice in order to make meaningful change (Leitch & Day, 2000).

Reflective thinking is one of the higher order thinking skills which is considered as an essential competency for professional development. The concept of reflective practice is now widely employed in the field of teacher education and teacher professional development and is the basis for many programmes of initial teacher education (Loughran, 2002). Reflecting on different approaches to teaching, and reshaping the understanding of past and current experiences, will lead to improvement in teaching practices (Leitch & Day, 2000). The use of reflective practice in teacher professional development is based on the belief that teachers can improve their own teaching by consciously and systematically reflecting on their teaching experiences (Farrell, 2007). As reflective practitioners, teachers can use the data gathered from these systematic reflections. As Valli (1997) suggests, they can “look back on events, make judgments about them, and alter their teaching behaviors in light of craft, research, and ethical knowledge” (p. 70). For teachers of adult English language learners, Richards (1990) maintains that self-inquiry and critical thinking can “help teachers move from a level where they may be guided largely by impulse, intuition, or routine, to a level where their actions are guided by reflection and critical thinking” (p.7).

Often, teachers tend to make decisions during their professional practices without understanding the rationale behind those decisions. Reflective practice can be an important tool in practice-based professional learning settings where people learn from their own professional experiences, rather than just from formal learning or knowledge transfer. It could be considered a most important strategy of personal and professional development and improvement. It is also an important way to bring together theory and practice, since through reflection a person is able to see and label forms of thought and theory within the context of his or her work. Reflective practice can help teachers explicitly

incorporate into their decision making the professional knowledge that they gain from their experience in the classroom (Fien & Rawling, 1996).

Reflective practice can be a beneficial process in teacher professional development, both for pre-service and in-service teachers. Reflective practice involves thoughtfully considering one's own experiences in applying knowledge to practice while being coached by professionals in the discipline (Schon, 1999). Reflective practice occurs when teachers consciously take on the role of reflective practitioner, subject their own beliefs about teaching and learning to critical analysis, take full responsibility for their actions in the classroom, and continue to improve their teaching practice (Farrell, 2007; Jay & Johnson, 2002; Valli, 1997). Larrivee (2000) pointed out that reflective practice moves teachers from their knowledge base of distinct skills to a stage in their careers where they are able to modify their skills to suit specific contexts and situations, and eventually to invent new strategies. Further Larrivee (2000) concludes that teachers should "resist establishing a classroom culture of control and become a reflective practitioner, continuously engaging in a critical reflection, consequently remaining fluid in the dynamic environment of the classroom" (p. 306).

Reflective practice enable students to develop meta-cognitive skills build self-confidence and encourage the development of the abilities needed to become independent and self-directed learners.

Reflection is defined by McLoughlin and Luca (2003) as the process that enables connections between various elements of some experience. According to Schon (1996), learning occurs only when the individual reflects on his personal experience. Corroborating, Socha, Razmov and Davis (2003) comment that one of the most effective tools to facilitate lifelong learning is the ability to reflect and learn from experiences.

Objectives of the Study

The main objective of this study was to examine to what extent reflective practice through learning portfolio development supported the teacher educators in their professional development. The study focused on five specific objectives:

1. To examine the benefits gained by teacher educators through reflective practice during the learning portfolio development process.
2. To identify the essential skills developed by teacher educators through reflective practice during the learning portfolio development process.
3. To identify challenges faced by the teacher educators during their reflective practice.
4. To analyze the role of academics in supporting learners to enhance reflective practice during the portfolio development process.
5. To suggest appropriate strategies to enhance the reflective practice among teacher educators.

Methodology

Research Design

Quantitative and qualitative research approaches were used in this study within a framework of a survey research design.

Population and Sample

The population for the study constitutes teacher educators who have registered for the MATE programme from year 2007. Eighty four (84) students registered for the MATE programme in year 2012/ 2013 was selected as the sample. Fifty six (56) returned their completed questioners. All the responders were teacher educators working as lecturers, principals and in-service advisors.

Instrument of Data Collection

The data were collected using a questionnaire. The questionnaire was a structured type and focused on collecting data on three identified key areas: (1) benefits gained by reflective practice, (2) essential skills developed through the reflective practice and (3) difficulties faced by teacher educators during the reflective practice. Few open ended questions were asked to find out difficulties faced during reflective practice and the support expected by the teacher educators from the academics to enhance the reflective practice. There were six main items in the whole questionnaire, and the number of questions in each key area varied. Also, under some of the main items there were several sub items, which were included to get a wider understanding on the aspects related to the main items. Rating scales, selection of the most appropriate answer, structured type questions as well as a few open-ended questions were among those sub items.

Data Analysis and Discussion

The data obtained was tabulated and analyzed applying elementary quantitative techniques such as percentages. Open ended questions were analyzed qualitatively.

Benefits Gained by Reflective Practice

The following indications were given to identify at what extent the teacher educators gain benefits through the reflective practices.

Table 1: Teacher Educators' Rating on Benefits Gained by Reflective Practice

Indications	Great extent		Some extent		Moderate		Least extent	
	N	%	N	%	N	%	N	%
Motivates me for self-learning	47	83.9	05	08.9	04	07.1	-	-
Allows me to take responsibility for my own learning	43	76.7	11	19.6	02	03.5	-	-
Allows me to assess my own work	45	80.3	09	16.1	02	03.5	-	-
Encourages me to evaluate my strengths and weaknesses	43	76.7	10	17.8	03	05.3	-	-
Fosters learning growth and competence	46	82.1	06	10.7	04	07.1	-	-
Allows me to have self - reflections about my work	39	69.6	11	19.6	03	05.3	03	05.3
Allows me to recall what I have learned	49	87.5	06	10.7	01	01.7		-
Allows me to develop my critical thinking ability	38	67.8	12	21.4	04	07.1	02	03.5
Allows me to use knowledge of the learning portfolio in my professional practices.	39	69.6	09	16.1	06	10.7	03	05.3
Allows me to set appropriate goals for future learning	41	73.2	09	16.1	06	10.7	-	-

As indicated in Table 1 the findings revealed that the highest numbers of the teacher educators have accepted that during the learning portfolio development process writing reflections on each learning outcome of the courses have helped them to gain benefits for their professional development. The majority of the teacher educators expressed that, reflective writing practices motivate them for self-learning (83.9%) and it is helped them to evaluate their strengths and weaknesses (76.7%) at a great extent. It is noted that 73.2% of the teacher educators accepted that reflective practices helped them to set appropriate goals for their future learning. It clearly showed that through the reflective practices they are able to construct their goals for future learning to move forward in their professional development ladder.

Essential Skills Developed through Reflective Practice

The following essential skills were given to teacher educators to rate indicating in which level they have achieved these skills through the reflective practices.

Table 2: Teacher Educators' Ratings on Skills Development

Skills	Highest level		Higher level		Average		Lower level	
	N	%	N	%	N	%	N	%
Organizing skills	44	78.5	09	16.1	03	05.3	-	-
Reflective thinking	43	76.7	08	14.2	05	08.9	-	-
Reflective writing	41	73.2	10	17.8	05	08.9	-	-
Critical thinking	39	69.6	13	14.2	04	07.1	-	-
Critical writing	38	67.8	08	14.2	06	10.7	04	07.1
Self-evaluation	39	69.6	06	10.7	06	10.7	05	08.9
Analytical skills	37	66.1	06	10.7	08	14.3	05	08.9
Creativity	42	75.0	07	12.5	07	12.5	-	-
Self-motivation	46	82.1	08	14.2	02	03.5	-	-
Self-regulated learning	46	82.1	07	12.5	03	05.3	-	-

According to data analysis given in Table 2 the findings revealed that during the portfolio development process through the reflective practices teacher educators improved their essential skills in a positive way for their professional development. But it is noted that comparing to other essential skills a considerable number of teacher educators developed their essential skills such as critical writing (10.7), self-evaluation (10.7), and analytical skills (14.3) in an average level and nearly more than 07% of the teacher educators developed critical writing, self-evaluation and creativity skills in a lower level. Therefore, it is understood that few teacher educators could not develop the essential skills up to the expected level due to some problems.

Challenges Faced During Reflective Practice

The following possible difficulties were given to teacher educators to rate indicating at what extent they faced challenges during the reflective practices.

Table 3: Teacher Educators' Ratings on Difficulties Faced During Reflective Practice

	Difficulties	A large number		Not a large number		Moderate		A small number		No any difficulties	
		N	%	N	%	N	%	N	%	N	%
Factors related to reflective writing	Could not understand the reflective writing practices	12	21.4	24	42.8	16	28.7	04	07.1	-	
	Difficult to write the reflection in a critical way	32	57.1	08	14.2	09	16.1	04	07.1	03	05.3
	The large number of reflective writings required	16	28.7	19	33.9	11	19.6	06	10.7	04	07.1
Factors related to peer interaction	Not having enough time for peer interaction	17	30.3	21	37.5	12	21.4	05	08.9	03	05.3
	No opportunity to meet the peers in one place due to distance	18	10.1	10	17.8	18	32.1	06	10.7	02	03.5
Factors related to guidance	Not having clear guidelines	14	25.0	11	19.6	18	32.1	07	12.5	02	03.5
	Not having enough day schools	14	25.0	10	17.8	22	39.2	03	05.3	04	07.1
	Not receiving immediate feedback from the lecturer	15	26.7	16	28.7	17	30.3	06	10.7	02	03.5
	Not receiving enough comments to improve the reflective writing	20	35.7	21	37.5	08	14.2	06	10.7	02	03.5
	Not having enough books to refer in the mother language	11	19.6	23	41.1	12	21.4	02	03.5	06	10.7

According to data analysis given in Table 3 the findings revealed that during the reflective practices a majority of the teacher educators faced different types of difficulties related to reflective writing, peer interaction and guidance. Only very less number of teacher educators mentioned that they did not face any difficulties. This showed that teacher educators need more guidance and support to effectively engage into the reflective practices.

Analysis on Open Ended Questions

Open ended questions in the questionnaire allowed the teacher educators to mention the problems faced by them to involve in the reflective practices effectively. The following constraints were indicated by some of the teacher educators: (i) less experience in reflective writing (63%), (ii) not knowing how to write the reflections critically (59%), (iii) not received enough support from the academics (36%), (iv) not received enough feedback in a constructive way (18%), (v) due to other responsibilities not having enough time to spend for reflective writing (57%), (v) due to distance difficult to meet peers and organizing a peer discussions (68%).

Open ended questions in the questionnaire also allowed the teacher educators to mention the suggestions to improve their reflective practices during the learning portfolio developmental process. The following suggestions were mentioned: (i) need more day schools for reflective writing practices, (ii) provide some sample documents of portfolios, (iii) provide enough guidance and (iv) provide immediate feedback for their reflective writing. It clearly showed that Faculty of Education need to give more attention to solve the above problems to further enhance the reflective practices among the teacher educators.

Conclusions and Recommendations

The study revealed that involvement in the reflective practices during the portfolio development process has helped the teacher educators to assess their strengths and weaknesses and take responsibilities for their own learning. Reflective practices have made all the teacher educators as active self-learners and at the same time it has been very helpful to increase the essential skills such as creativity, self-evaluation, self-reflection and critical thinking for their professional development. But during the portfolio development process teacher educators faced difficulties related to writing the reflections in a critical way.

Overall, the analysis appears to suggest that to increase the reflective practices of the teacher educators the Faculty of Education of the Open University of Sri Lanka need to make available more opportunities and further guidelines for reflective writing and continuous guidance and support for learners by providing constructive feedback on their reflective write-ups. Further, the Faculty need to be concerned about the following aspects;

1. Preparing clear guidelines and an instructional manual for learning portfolio development process to be followed by academics and teacher educators.
2. Guide the students how to engage themselves to reflect on changes related to their learning process such as critically evaluating the benefits of the learning activities, assessment procedures, learning approach, learning resources and strengths and weaknesses of the courses.
3. Providing opportunity for peer discussion and social interactions using OUSL online learning platform.
4. Providing immediate feedback in a constructive way
5. Developing higher order cognitive skills such as critical thinking, analytical skills and self-regulated learning practices using effective strategies.
6. Encouraging how to use the reflective skills for professional development.

Overall, it can be concluded that it is the responsibility of the academics to support students to minimize the effects of hindering factors and to maximise use of facilitative factors to develop their reflective skills. Close supervision and monitoring, providing constructive feedback and appreciating their efforts would motivate the teacher educators to engage in their reflective practice during learning portfolio development process. It would be helped teacher educators for their professional development.

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A CRITIQUE OF THE FUTURE OF LEARNING- MOOCS- IN REFERENCE TO NIOS AND WORLD PRACTICES

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Abstract

MOOCs have popped up in the context of emerging networking technologies that enable and influence new learning formats and opportunities in education. Based on their different pedagogies, there are connectivist MOOCs (cMOOCs) that focus on discussions, providing interactive learning environments, social network and blog engagement, peer evaluation, and sovereignty of educational objectives, and extended MOOCs (xMOOCs) that concentrate more on content delivery and knowledge transfer through quizzes and lecture videos and multiple choice questions. Advantages for learning and instruction via Internet include the freedom of learning anywhere and anytime and the flexibility of creating customized learning environments and preferences. Other advantages include the possibility for nurturing productive interaction between learners and teachers, availability of help from facilitators and accessibility of the continuum of open educational resources. Educational data dig and learning methods will help teachers by creating reusable learning objects and providing immediate feedback to learners at key stages of the learning process without making the teachers outmoded. Following unquestionable outreach of MOOCs, especially style/design of xMOOCs, the National Institute of Open Schooling (an open and distance schooling institution of India) is all set to launch its courses to facilitate India's growing need for education at school level. In spite of the futuristic technology of MOOCs (as a new development in the field of ODL), there are issues that need to be addressed - technical challenges in developing nations, lack of authenticity in the ocean of internet-knowledge, low study motivation etc. The pedagogically significant question as to how learning and instruction can be supported is sometimes successfully left out but needs prompt solution for effective and qualitative spread of education. The paper attempts to provide a short critique of the future of learning- MOOCs- in reference to NIOS and world practices. In the author's view, there is absolutely no doubt about its world appeal but a sincere thought on its content and delivery is required to make it more authentic and acceptable in terms of learning of a particular field.

Keywords/Set of words: *Connectivist MOOCs, extended MOOCs, open educational resources, instructional uses and learning process*

Introduction

We already have heard much about Massive Open Online Courses but are we really aware of them in exactitude? What is the difference between Open Educational Resources and MOOCs? Are MOOCs the future of learning in all its controversies?

MOOCs have popped up in the context of emerging networking technologies that enable and influence new learning formats and opportunities in education. Connectivist MOOCs (cMOOCs) focus on discussions, providing interactive learning environments, social network and blog engagement, peer evaluation, and sovereignty of educational objectives, and extended MOOCs (xMOOCs) concentrate more on content delivery and knowledge transfer through quizzes and lecture videos and multiple choice questions.

A few MOOCs of mention which are running throughout the world are:

- Harvard, Berkeley and MIT (EdX)
EdX courses consist of weekly learning sequences. Each learning sequence is composed of short videos interspersed with interactive learning exercises, where students can immediately practice the concepts from the videos. The courses often include tutorial videos that are similar to small on-campus discussion groups, an online textbook, and an online discussion forum where students can post and review questions and comments to each other and teaching assistants. (Wikipedia 2015)
- Stanford University (Coursera, Udacity)
Coursera courses are "accessible for free" and some give the option to pay a fee to join the "Signature Track." Students on the Signature Track receive verified certificates, appropriate for employment purposes. These students authenticate their course submissions by sending webcam photos and having their typing pattern analyzed. There are still free courses, but majority are fee-based. (Wikipedia 2015)

Udacity consists of several units comprising video lectures with closed captioning, in conjunction with integrated quizzes to help students understand concepts and reinforce ideas, as well as follow-up homework which (specifically) promotes a "learn by doing" model. (Wikipedia 2015)
- The Open University (Futurelearn) -Launched in September 2013, UK , Partners – 26 universities
- NIOS- MOOCs/MOSOCs – These are about to be launched and the details are a part of the paper under the head- NIOS MOOC Model.



Source: Adam Simpson

Advantages for learning and instruction via Internet include the freedom of learning anywhere and anytime and the flexibility of creating customized learning environments and preferences. Other advantages include the possibility for nurturing productive interaction between learners and teachers, availability of help from facilitators and accessibility of the continuum of open educational resources. Educational data dig and learning methods will help teachers by creating reusable learning objects and providing immediate feedback to learners at key stages of the learning process without making the teachers outmoded.

The primary objective of the paper is to provide a short critique of the future of learning- MOOCs- in reference to NIOS and world practices. In the aforementioned objective, this open ended theoretical paper clubbed with the author's experiences as a MOOC drop out and a MOOC designer attempts to map rampant positives, negatives and agreed upon views on MOOCs with a word of caution (to be noted) to beginners and young players of MOOCs to ensure its quality and successful as also meaningful delivery.

Shaping a critique of MOOC, the whole paper reflects some theoretical and the author's experiences (in the capacity of a drop out and designer) in the postmodern world of flux and technological learning innovations.

OER and MOOC

Let us all know the basic meanings which are important in the paper's context to move further. To start with are Open Educational Resources (OERs). The Open Educational Resources are the digitized version of the learning materials that are open and freely available to anyone for teaching and learning processes. Online course material was already available for many years as OER but MOOCs introduced in them courses that start on a regular basis with definite timelines and assignments.

What a MOOC actually is, as a learning format, provides a challenge for definition. MOOC was coined in Canada in 2008 to represent a type of online class that depends upon small group interactions/discussions for most of the instruction. However, they differ from OER material derived from distance teaching universities and Open Universities/Institutions. Legacy of OERs and several other online programmes matters for many reasons, as first these origins may reveal that the MOOC is, or is not, a genuine educational innovation.

The history of distance learning shows earlier online abortive innovations such as AllLearn, Fathom etc which were folded after a few years of launch. Most MOOCs nowadays are basically an attempt to shift the classroom online, but measurable/gradable learning of these massive courses may eventually lead to the breakdown of that model.

The creel of products carrying the MOOC label is now quite diverse. There is no professional academic time allocated to guiding or supporting individual learners. Some aspects of some MOOCs are now credit-bearing and this trend is spreading as MOOCs begin to offer accredited learning.

Types of MOOCs

Two classes of MOOCs coexist in present trends, but to differentiate them by certain features, these are of two types: the cMOOC and the xMOOC.

cMOOCs- C stands for "connectivist" that run on open source learning platforms and are led by academic as part of their academic activity. Peer learning is the pedagogical model. These are associated with origin institutions Abathasca and Manitoba Universities in Canada.

xMOOCs- These are extended online versions of traditional learning formats (lecture, instruction, discussion etc.) on outsourced software platform/support. They (such as EdX, Udacity, FutureLearn and Coursera) provide contractual and commercial relationships between institutions which create content, and technology providers.

Jams Surrounding MOOCs

Cream of the crop institutions, primarily leading US/UK universities are widely engaging enthusiastically in MOOCs by lending brand, content, funds, staff, badging (emblem/tagging) and policy support. They seek novel and experimental opportunities for brand enhancement, pedagogic experimentation, recruitment and business model innovation. The pro-MOOC thrust reports positively on these experiments, describing a process of maturing, expansion and deepening. (The Maturing of MOOC, September 2013).

Badging and assessment to evidence lifelong learning



Source: Ferguson

Emerging and less popular institutions have not so far involved themselves strongly with MOOCs through multiple and miscellaneous reasons such as lack of appetite, lack of capacity, or lack of opportunity. Often, smaller players who have considered the MOOC issue have sounded alarm bells – they see threats of being left behind, of losing market share and recruits. (The Maturing of MOOC, September 2013). It is also charged that MOOCs are unable to serve learners with more complex learning needs (e.g. learners with learning disabilities with a range of issues and layered needs – mental health, relationships, behavioural, physical, medical, sensory, communication and cognitive).

Quality, authenticity, accreditation, amount of flexibility and openness, sustainability and the value of the learning achieved, pedagogy, poor engagement of weaker learners, exclusion of non-tech savvy learners etc are some of its problems that need to be addressed responsibly for these can make or mar the future of learners.

In terms of MOOCs, there are conflicting opinions among MOOC practitioners and stakeholders. One band wagon of these welcomes the thrill and force that MOOCs bring to learning, teaching and certification emphasizing on learning experiences and innovative formats of pedagogy, and focus themes such as access, empowerment, inclusivity, relationship building and community engagement (as Ferguson and Mc Auley put). The other band wagon criticizes MOOC as it is not something that is innovative but something that already existed in the form of Open online resources (See The Maturing of MOOC).

Maybe there are effective ways to deliver course content online, but much more research is needed to determine what kinds of courses, and what kinds of course delivery systems, will lead to actual learning. The bottom line is: if "teaching" is happening, but learning isn't, we've failed. Due to this reason only Duke and Amherst opted out.

Being a Coursera MOOC drop out, one knows what makes the mind of most learners. The author often was in conversation with many MOOC learners. Through their conversations, it was very obvious that they were excited about the innovative delivery of content. They were curious about MOOCs and online learning with a desire to learn new subject matter. Career advancement and getting certificates were less important drives as due to boredom or lack of motivation/over indulgence with technology most of them dropped out.

Consensus on MOOCs

MOOCs are undoubtedly known for their importance, popularity and expansion and one would say colossal expansion. MOOCs engage learners in technological aspects, content transaction and great flexibility. Brand extension, recruitment, educational innovation and revenue opportunity are accepted values of MOOCs. In the ever-shrinking world of technological innovations and world competition, the enduring utility of MOOC cannot be denied.

Ferguson (2014) said that massive participation offers learners support from a wide range of other learners, resources provided by those learners in the form of discussion and links and a range of diverse cultural perspectives; offers educators affective benefits, potentially increased access to resources and motivation to develop teaching practices; and offers society a potential to develop tools and resources, to develop professional practice for global impact and increased access to higher education.

A Gartner Hype Cycle (2013) may be at work in the MOOC phenomenon where, in the first phase, the cycle reflects much potential with a second phase of consolidation and the last third phase of victory and acceptance. If this cycle is in motion then surely acceptance will come at the end of all logjams and controversies.

According to Mc Auley Report (2010), MOOCs exist in a cultural space contested by business interests, standardised-skills lobby and social media, and innovate the process of knowledge-making. They are “walled gardens” of conventional learning management systems, insofar as they share the processes of knowledge work, not just the products. MOOCs are a first generation testing ground for knowledge growth in a distributed, global, digital world.

Equilibrated Points on MOOCs

Gaebel (2013) in his article defined MOOCs by the consensual features (as stated above) and characterised them as a step in the ongoing effort to improve education participation and the learning experience. He said that a MOOC model should not be limited to, certification, assessment, employee recruitment, human tutoring, advertising and tuition fees.

Bates (2012) in his impacting write-up attacks the Coursera for delivering a product which is error-ridden, fails to teach higher order skills of critical thinking and creative thinking, and does not treat students as individuals. Nonetheless, he also praises Coursera for efforts to make thought and knowledge open.

There are two sides of the coin. To re-emphasize, on one side, the radical quality of MOOCs to spread education with the help of technology is commendable having large revenue generation prospects but on the other side, these suffer with shallow quality of learning and learning achievement, and materialistic ends of the producers.

The National Institute Of Open Schooling (NIOS) Model

The National Institute of Open Schooling (NIOS) operates through a network of five Departments, Regional Centres and Accredited Institutions (Study Centres) in India and abroad. It has a current enrolment of about 2.71 million learners at Secondary, Senior Secondary and Vocational levels which makes it the largest open schooling system in the world. It is now set to launch its own Massive Open School Online Courses at school level- world's first in the field of school education. The **Massive Open School Online Courses (MOSOCs)** along the lines of MOOCs are ready to serve learners with access to Internet, and those who may want to have complete online learning experiences for their education. The MOSOCs of NIOS have a Learning Management System (LMS) for direct interaction between the learners and teachers, online admissions, discussion forums, blogs, online classes through video conferencing, online assessment, etc. Here, learners will get an opportunity to study a school level course online and gain credit for certification purpose.

The model has the following features:

1. xMOOCs and cMOOCs- The NIOS model is based on a blend of x and c MOOCs which comprise peer learning, interaction, quizzes, puzzles, multiple choice questions and higher order thinking skills to deliver the content. Portions of unnecessary details, repetitions, boredom provoking monotonous exercises etc. are done away in the material.
2. Customized content suited to individual learning- Applications will enable Indian learners to be served more engaging material based on their individual profiles. Here, a plan to provide adaptive learning by regular interventions is being considered.
3. Flexibility- Anywhere-anytime access so that learners can enrich their skills in learning a new subject or taking up a course.
 - Credit Accumulation: Learners can choose to appear in anyone or more subjects in any examination and earn credit which will be accumulated till all five subjects required for certification are successfully completed within a period of registration.
 - Transfer of Credit: Learners can avail the facility of Transfer of Credit (TOC) to a maximum of two subjects passed from the selected Boards provided these subjects are also available in NIOS scheme of studies.
 - Part Admission: Under this provision, if learners are studying in a regular school, or have already passed Secondary/Senior Secondary examination or any other higher course from any recognised Board/University, they may opt for up to four subjects of their choice, to update knowledge and educational qualifications. However, on passing, only the Marksheet will be issued and no other certificate will be issued.
4. Cost- A policy decision is being taken to make it suit the Indian context where illiteracy and high dropout rates are common features.
5. Access to high quality education, to quality teachers and peers- This is kept to increase collaboration in learning, auditing and feedback for better delivery and comprehension of knowledge and learning achievement.
6. Communication and Collaboration- Academic, administration, evaluation, technical and student support staff will ensure over-all cooperation and participation of all learners for continuous online/offline support so that there are low dropout rates and education reaches out to one and all.

7. Counselling within 24 hours by the NIOS head quarters.
8. Feedback facility
9. Assessment- The learners will undergo a series of assessments-formative and summative. This can be exercises/ tasks of multiple choices, gap filling, matching and higher order thinking skills (*HOTS*).
10. Certification- After successful completion of the courses learners will obtain a free certificate of attendance that will certify that the participant has successfully completed the course. A certificate with verified identity will be provided by paying a certain fee (awaiting policy decision)
11. Download Ability- The educational material is downloadable and can be read offline.
12. Intellectual property rights rest with NIOS.
13. Accessibility- The website is in accordance with the *guidelines* for Indian *Government Websites that maximizes learner-participation especially differently-abled learners*.

Casey (2012) suggested that the adoption and esteem of learning innovations are determined by social, political and cultural factors. NIOS too keeping this in mind has formulated its content and delivery to make it acceptable and enduring education provider. The learning technology here is effectively infused in the learning material so that it appeals to the Indian learners and does not fade away after its launch like some other online courses (eUniversity of UK, Alllearn, Fathom etc.) of the world. NIOS must walk the world way in its own local way.

A Word of Caution

After the criticism of MOOCs in reference to NIOS model and world perspectives/practices and the author's dual position, some points as a word of caution have come to the fore for successful impact and delivery of the future of learning and its sustainability. Points to be taken into concern are as follows:

- **Need of customised layout suiting the socio-cultural age, especially for beginners and young MOOC players such as NIOS**
As suggested by John Casey (2012), socio-cultural, political and economic aspects of any locale should be taken into account before indulging in MOOCs as what is applicable and meaningful for other countries may not be that meaningful for another. A research on the clientele and climate is wanted before starting the massive courses having massive impacts of success and failure.
- **Sustainable learning model not limited to, certification, assessment, employee recruitment, human tutoring, advertising and tuition fees**
An enduring plan which goes beyond the usual formula of content delivery and monetary benefits is the demand of the hour to really spread the vision of quality education for all.
 - **Accreditation-** It has two aspects in MOOC world. The first is its ability to open the door to secure revenue from course fees. Second is the issue of how the learning is assessed, authenticated and valued by producers.
- **Urgent review of the practices associated with MOOC**
A rigorous study of the positives and negatives of all MOOC players should be analysed upon so as to do away with their inherent flaws and make it workable for specific individual conditions. There is also a consistent call to propose a different theoretical scenario to support current online education.

- **Policy Framing-** Wait and watch is not a viable policy for institutions and governments. It must be noted that MOOCs are not a secluded issue, rather they focus and react on the already existing policies and build upon them. This calls for a revisitation and revalidation of the existing education policies of the institutions/governments to bring on better and effective results.

Conclusion

Today, there is a demand to make this obvious future of learning (MOOC) use the pedagogical models eclectically in order to maximise learning opportunities in the future. The quest for a sustainable business model remains one of the biggest challenges MOOCs. On one hand, when the environment is pro-MOOCs in developed nations despite all shortcomings, we of developing nations, on the other hand are standing in the middle of innovatively changing globe and set-traditions having high demands for connectivity, online literacy and English language skills.

Owing to the above critique, it is clear that MOOC is the future of learning in the ever-shrinking techno-savvy world and which will take over all as the only source of popular and elite learning in times to come. MOOCs as discussed should be taken upon in the light of a country's context and technological development with aptly framed policies. Proper badging (tagging for genuineness), assessment and accreditation hold key to successful delivery of MOOCs. Beginners and young players like NIOS must look into the above future needs of MOOCs to sustain themselves and innovative education delivery in the dynamic flux of globe. There is absolutely no doubt about its world appeal but a sincere thought on its content and delivery is required to make it more authentic and acceptable in terms of learning of a particular field. The time for improvement, adaptation and update is definitely now.

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STUDENT RETENTION IN OPEN AND DISTANCE LEARNING: UNIVERSITY LIBRARIES' ROLES

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Abstract

Student retention is very essential to every Higher Education Institution (HEI) as it reflects negative consequences to the institutions. HEIs now have to intensify their efforts to improve retention, and all parts of institutions, including the libraries have to play their roles to ensure attrition rate in their institutions are in minimum or acceptable level. The purpose of this paper is to identify important areas and actions that university libraries in open and distance learning mode, in particular, can do to positively impact student retention. Among the actions are to embed library support in learning management system, to identify students preferences and experiences of online and other technologies, and to work and co-operate closely with academics in delivery of academic programs and to provide relevant data and information to students. Finally, several initiatives of university libraries in student retention efforts also will be discussed in this paper.

Keywords: *Student retention, Library support, Open and distance learning, Learning management system, Embedded librarians, E-books*

Introduction

Student retention and completion in distance education is a very complex issue. The meaning and interpretation of retention itself may differ among individuals and institutions. When a student withdraws, they are recorded as a loss in a university's retention statistics. This occurs regardless of the student's next steps (Hagel *et al.*, 2011). For individual learner, attrition means a lost opportunity to enhance his level of personal and career development (Keith Tyler-Smith, 2006). For open and distance learning (ODL) institutions, their noble aim of massification of education may not be realised if the attrition rates in such institutions remain high (Latifah, Sungsi & Ramli, 2009). Thus, all parts in ODL institutions including the libraries have to play their roles to ensure attrition rate in their institutions are in minimum or acceptable level.

Literature Review

Academic libraries are very essential to the mission of universities across the nation. According to George D. Kuh and Robert Gonyea, “the library is the physical manifestation of the core values and activities of academic life [...] the library’s central role in the academic community is unquestioned” (Kuh & Gonyea, 2003). In distance education, the major role of libraries is to provide access electronic resources available in the libraries to all (Burgstahler, 2002). Besides providing electronic resources, libraries in ODL institutions must continue to improve their library instruction or information literacy (IL) programme (Jurkowski, 2003). Even with the two roles, libraries in ODL institutions must provide all other resources and services as face to face students, such as circulations, interlibrary, reference service, and physical reading areas. According to ACRL *Guidelines for Distance Learning Libraries Services* (ACRL, 2000), “Members of the distance learning community, including those with disabilities, must therefore be provided effective and appropriate library services and resources, which may differ from, but must be equivalent to those provided for students and faculty in traditional campus settings.”

However, academic libraries face increased external pressure to provide assessment in library services. This can be shown in a remark by Sarah Pritchard that “the future vitality of libraries in academia will dependent upon whether they can dynamically and continually prove their value to the overall educational endeavor” (Pritchard, 1996). One of the assessments is by their contribution to support their institutions or universities in retention efforts.

Some studies have examined the correlation between library use and student engagement. Laird and Kuh found that participation in information and library-related activities (such as using the library portal to find academic resources, asking librarian for assist, etc) were positively correlated with student engagement in other areas (Laird & Kih, 2005). A research by Haddow (2013) stated that “a higher proportion of the students who were retained into their second year of university were logging into authenticated resources more often than the students who had withdrawn after their first semester”.

Libraries in Influencing Retention

Academic libraries especially in ODL institutions are expected to contribute to retention efforts. According to Tinto (2003), libraries can contribute in student retention by helping students to commit and engage academically. To do so, ODL students need access to the best and appropriate information resources and library services. Further, students are more likely to use library resources and services when their academic programs are challenging (Kuh & Gonyea, 2003). Among actions and initiative libraries can do in contributing to students retention in ODL institutions are by embedding librarians in learning management system (LMS), determining student preference in using online and other technologies, determining student trigger points for withdrawal, and providing relevant data and information to students.

Embedding Librarians in Learning Management Systems (LMS)

For decades, libraries have tied a strong relationship with faculty members and students. Meetings and discussions are organised to determine books, journals, online databases and other resources suitable and easily available to students. Information Literacy (IL) classes or courses and information skills workshop to teach new students the best way to search for information resources also have been organised. Some universities have made these courses credited or compulsory to all students. However, to forge this relationship, libraries can embed their library support within units of study, particularly through learning management systems (LMS) (Dale & Cheshir, 2009). Embedding librarians in the LMS is all about being as close as possible to where students are receiving their assignments and gaining instruction and advice from faculty members. It also gives the librarian full (or nearly full) access to course materials and course tools (Tumbleson & Burke, 2013). All questions

which are usually asked at library reference desk such as “How can I use OPAC?”, “Where are books on English Literature?” and “Do you have an original edition of the Bay Psalm book?” will be answered by the librarian via LMS when a librarian is embedded into LMS. Embedded librarian also can incorporate library instruction into an online class. Figure 1 shows one example of embedding librarian into LMS by Community College of Vermont (CCV).

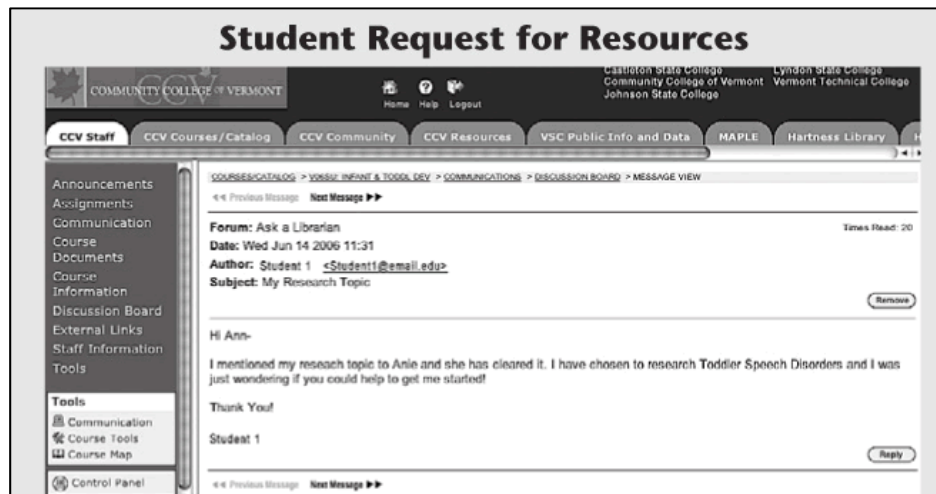


Figure 1: Embedding librarian in LMS by Community College of Vermont (Matthew & Schroeder, 2006)

According to Matthew & Schroeder (2006), the program grew from two courses that first semester to 43 in Spring 2006. A survey by Tumbleson & Burke (2003) on the usage and advantage of embedding librarians in LMS shows top two advantages are:

- (a) Encouragement to contact reference librarians for further research assistance
- (b) Embedded librarians able to link database and other information resources within the course

This survey indicates by embedding librarians in LMS, it will provide a platform and mean for students to communicate with librarians on specific issues on their assignments and projects. Embedding librarians in LMS also will provide students with a source or link to specific databases accordance to the course. By embedding librarians in LMS, it also will provide opportunity for librarians to embed information literacy tutorials (IL) to students. This is very important as remote students are unable to attend face-to-face IL classes.

Libraries in ODL also must consider in embedding librarians in faculty academic activities such as in developing assignments and research projects. When librarians are included in the team of developing these assignments or research projects, issue of some assignments or research projects do not require students to get into the library and expose them to scholarly information resources will not be arisen, as the librarians will be able to advice and provide some input to make the assignments or research projects in-line with the requirement to use library and access to scholarly information resources.

Determine Students Preferances of Online and Other Technologies

In ODL institutions, technologies are very important part in teaching and learning. Comparing to traditional education system, students in ODL consist of wider range of ages and IT skills. For some groups of students, using various technologies in their learning process may be challenging. If libraries are to assist in retaining students they also need to be mindful of differences between students in their preferences and experiences of online and other technologies (Hagel *et al.*, 2011).

For example, a study by Ziming and Lili (2011) stated that some participants found ‘digital libraries’ unfamiliar, uncomfortable or difficult to use for activities such as course reading and materials, searching for and download item. Students in the study also found struggled due to lack of human help, poorly scanned text and slow download speeds and requirements to read onscreen (Ziming and Lili, 2011).

Hence, libraries must provide students with both type of synchronous and asynchronous communication to assist this type of students. Among synchronous communication tools are chat, instant messaging, phone and various social media apps such as WhatsApp. As most ODL students consist of working adults, libraries must provide asynchronous communication tools to them. Streaming video, screen casting using databases, and narrated slideshow for instance, may help students as most of ODL students revise their study and do their assignments after they finished their working time or at night. With technologies evolving rapidly, libraries need to ensure that at-risk students are not further disadvantaged by the increasing use of unguided use of e-books and other technologies.

Determine Students Potential Trigger Points for Withdrawal

Another initiative the libraries should do in helping universities in retention efforts is to predict potential trigger points for student withdrawal. Assignments submission times is always a predictable trigger points for some students to withdraw (Nelson *et al.*, 2012). By collaborating with faculty members especially academicians in determining ‘at-risk’ students, libraries can determine point-of-need access to a particular resource or training (Hagel *et al.*, 2011). This may influence these students to withdraw from their studies. The failure to receive requested books in expected time, difficulties in navigating databases and retrieving full-text articles are few examples of critical problems that must be occurred to this type of students. In term of library reference service, librarian should increase their effort during assignment preparation time. There should be more librarians at reference desks during this period as more students will need the librarians’ expertise in providing advice and assistance to various information resources in order to complete the assignments.

Libraries also must identify students’ issues and problems in their university life by look at students’ questions at library reference desks. Grallo *et al.* (2012) pointing out that “most of what is written has been focused not on library’s role in helping students adjust to college life, but rather on specifics such as library collections, facilities, and instruction.” They actually found that students were actually coming to the library to get help “learning how to function in their new environment” (Grallo *et al.*, 2012). This is illustrated by students’ questions at reference desks such as getting student ID, and financial aid questions.

As student withdrawal decisions are unlikely to result from a single factor, library’s collaboration with other institutional support units is very essential for student retention. Attrition may be reduced when students are provided with integrated support through collaborations between a library and other university functions and services. According to Hagel *et al.*, 2011, one mean of achieving integrated support is through a learning commons. The Queen’s University and the University of British Columbia’s (UBC) for instance have established their respective Learning Commons since 2002. These Learning Commons often combine advanced technology, learning support, and collaborative work areas and emphasise a learner or student-centre approach to services (Mitchell & Soini, 2014). Peer-to-peer service models is one of fundamental to Learning Commons environment and its contribute to student success.

To Provide Relevant Data and Information

Data and information is one of the most important parts in students academic and library plays very important role in ensuring that user get the information that they need precisely. According to Bell & Steven (2008), information literacy program initiative helps user to produce high level of research paper when they experience the program handled by the library. Online databases provided by library to user will assist them in gather the needed information and this will become one of the major contributions of student retention in university or institution. In OUM, around 30 databases provided to enable user to find all possible information that they need. Besides databases, other services like document delivery services and inter library loan services will assist user in get the information that they need. This kind of assistant provided will help student to realize their capability in doing their task.

Bell also added that the more the students use the library, the more they will get attached to the librarians and become friends. The librarians assist students to build their roots within their academic community. This statement relates to OUM library where most of the students are working adults and sometimes library is new term for them. Librarian and library have to ensure that they attach to the library and provide them with everything they need. As for user that did not have any basic in searching for the information, this is where librarian and library need to build user knowledge from roots.

Conclusion

There are many different reasons on students withdraw from their studies. A student's withdrawal decision is unlikely to result from a single event or factor (Glogowska, Young & Lockyer, 2007). All centres and faculties in ODL institutions, however, can improve retention by not only working in silo. Collaboration among faculties and centres, includings the library, is very essential not only to enhance the general commitment of students to their studies and their institutions, but also by anticipating how particular or a group of reasons may trigger student to leave.

There are some other initiatives can be done by libraries to retain students such as by hiring students as part time staff, incorporating library previlages such as library study rooms access without waiting, and personal library assistance and advice to 'in-risk' students. Further research should be done to identify library's impact and contributions to universities goals as "vast majority of published library research literature emphasise input/output measures and program evaluation rather than library impact" (Emmons & Wilkinson, 2011).

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THE EFFECTS OF THE LEARNERS' ATTENDANCE TO THEIR PERFORMANCE IN LEARNING SKILLS COURSE AT OPEN UNIVERSITY MALAYSIA

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Abstract

Learning Skills for Open Distance Learners is one of the courses offered by the Faculty of Education and Languages (FEL) at Open University Malaysia (OUM). This course is offered to all students (normally offers in 1st semester) undertaking any programme with OUM. The Learning Skills course has been introduced since 2004 with continuous assessment. Improving the first semester learners' learning has been part of a broader set of initiatives to increase learner achievement in OUM. Taking consideration of learner constraints, the faculty has proposed fully task based assignment for the new assessment. The changes of the assessment are to help learners develop appropriate expectations initially and then to ensure that the quality of learners' learning, once they are already in is as positive as it can possibly be. The ability of the learners to perform depends on the time of their interaction with their peers and their instructor. Massingham & Herrington (2006) reported even though students increased their attendance through an incentive scheme; performance remained the same. Clearly, the quality of the learning experience has to change. In online learning, learning process occurs when there is a communication between the learners and lecturer through asynchronous and synchronous communication. With the rapid advancement of technology, instructors have an array of tools and features that encourage student engagement and collaboration (Rapposelli, 2014). Do attendance matters in an online learning in its impact on the learner's performance? This study intends to evaluate and observe the student's engagement in their online learning in line with their performance. The learner's engagement recorded in the Learning Management System in MyVLE, Open University Malaysia (OUM) is used as an indicator to measure the effect of the learner's attendance to their performance in an online learning. This study reported the effect on the learners' attendance for their performance. The frequency of the learners' engagement through four tutorial sessions are recorded and analysed and compared to their result (in grade) to observe the effect and impact on their performance.

Introduction

Open and distance learning (ODL) has become an important mode of learning in the digital age. It is perceived by many adult learners as an alternative choice to conventional education. It is particularly popular among adult learners who are unable to pursue their studies on a full time basis. This is probably due to the fact that ODL has a more flexible instructional and learning structure that frees learners from the constraints of time and place. In recent years, the rapid advancement of information

and communication technologies has paved the way for educators to explore new patterns and innovations in ODL.

In Malaysia, Open University Malaysia (OUM) is well recognised as the pioneer in ODL education and leading promoter of lifelong learning. As one of the most rapidly growing ODL institutions in the region, OUM is proud of the sharp cumulative growth of its student population from 753 2001 to about 168,000 in 2014. OUM has so far produced a total of more than 90,000 graduates at both undergraduate and postgraduate levels. The swift increase in the number of students opting to learn in OUM's open and distance learning environment indicates the practicality and relevance of this form of learning. The large number of learners who have graduated from OUM is also a solid testimony of the feasibility of ODL for effective learning. Nevertheless, OUM is aware that to maintain its competitive advantage, the organisation has to constantly improve its learning materials and learning system and tools.

Learning at OUM

The majority of Open University Malaysia's (OUM's) learners is matured working adults, some of whom have left education for many years and are now embarking on a part-time study. As part-time learners, they have to juggle around multiple commitments and schedules in order to cope well with their studies. They are distributed throughout the thirty eight learning centres across the country, and being distant from the main administrative campus, there is always the risk of learners experiencing isolation and alienation from the institution, feeling of being deprived of the services and staff that can be of valuable assistance to them (Bennett, Priest and Macpherson, 1999).

To address the challenges that the new learners may face on entering OUM, the Faculty of Education and Languages introduces the Learning Skills for Open and Distance Learners (LSfODL) course. This course is offered to all OUM students undertaking any programme with OUM. As open and distance learner, they should be able to learn independently and optimize the learning modes and environment available to them. This course is designed to give exposure to open distance learners on strategies and techniques that enable them to make the most efficient use of their time, resources and academic potential. By the end of this course, learners should be able to manage their learning, apply appropriate reading techniques, note making and note taking techniques. In overall, the LSfODL course is developing and improving our learners to make more efficient use of their study time – get more work done in less time; to make their learning easier, and help retain what they have learned for longer; and to feel the work and effort involved is worthwhile; it 'pays dividends'. This paper investigated the impact of LSfODL course on learners' learning in an OUM's ODL environment.

Research Objectives

The research examined the impact of the content of the course at the level of learners' exam performance. The relationships between the learners' exam result and learners' attendance after going through the tutorial were also investigated. To guide the research, two questions have been developed as follows:

- Q1: Does the communication pattern reflect the dynamic communication between the tutor and the learners?
- Q2: Is there any effect on the learner's exam result towards attending the LSfODL course?

Literature Review

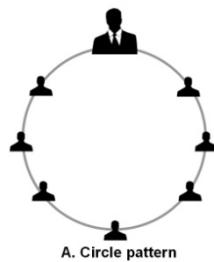
Open and Distance Learning is becoming more and more popular among working adults. However, it continues to be challenging to fully engage all these learners. According to Dam (2004), different learners show different adoption rates and that older learners are more resistant to e-learning. In his research on moving from traditional learning to flexible mode of delivery, Holley (2002) noted that the change which involved replacing contact hours in a course with online interactions is not readily accepted by students. According to Pillay, Irving and Tones (2007), many institutions that have adopted online learning pay little attention to the personal and technical skills of learners that are required of students to achieve academic achievement and satisfaction. Lotze (2002) pointed out that adult learners returning to academia after a long absence from it often experience high level of discomfort with technology. Paloff and Pratt (2001) opined that learners must be given clear guidelines otherwise they will become confused and disorganized and their learning process will suffer. According to Lynch (2001), without such training, faculty will be spending excessive time troubleshooting problems related to technology while learners experience frustration and diminished self esteem. According to Tinto (1993), orientation programs have significant impact on the adjustment of new students to their new learning environment, culture and requirement. The mission or role of orientation programs according to Greenlaw, Amliker and Barker (1997) are to provide continuing services and assistance that will help students in their transition to a new learning environment, expose them to the broad educational opportunities of the institution and integrate them into the life of the institution. Zieger (2005) noted that there was an increased interest in the research on the impact of orientation programs for undergraduate students during the 1980s, where institutions begin to see the importance of such programs on students' satisfaction and retention. Dessler (2003) opined that an ideal orientation program should be able to make students feel comfortable, understand the university's culture and environment, expectation and goals and become socialized into the system. Tinto (1993) termed these efforts as academic and social integration, which have impact on students' decision to persist in their programs. Thus, many ODL institutions introduce introductory courses to improve on their students' learning readiness in this new learning experience

Communication Pattern

Communication pattern plays a significant role in understanding the nature of communication between tutor and students and student and student. The pattern in an online forum is expected to reveal the commitment of either tutor or student in their teaching and learning activities.

Communication means transferring messages from one to another and it has several forms such as intrapersonal, interpersonal, group and masscommunication.(communicationtheory.org, n.d.). Communication can be transmitted in a number of directions: downward, upward, horizontally, diagonally, and through the grapevine. These communications can be formal or informal; in either case, the actual pattern and flow of communication connecting senders and receivers are called communication networks. Because this system contains all the communication of the organization, these networks have a pervasive influence on the behavior of individuals functioning within them.

Command Communication Pattern



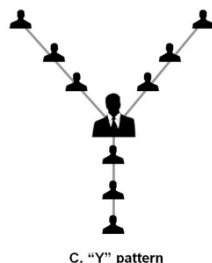
In Circle pattern, the sender (Group Leader) can communicate with the receivers (group members) who presents next to him/her. No others group members can't receive the sender's message directly and they receive messages from the other group members who sharing the message from the sender. In this pattern of communication the sender messages travels all over the group through sharing by its members will take time to reach sender again



In Chain pattern, the same problems were appearing as like a circle pattern. The worst part in the pattern is the last member receives the modified messages from the leader. In this case the leader can't find whether the last member receives the correct information or not because there is no feedback to identify the message distortion.



In Wheel pattern, one of the best pattern while compare to other three. The leader has direct contact with all the group members and there are no communication problems, time issue and feedback from the group members. But all the group members can't connect with one another.



In Y pattern, it's more complicated pattern and also has the communication problem which appears in both circle and chain pattern. The group is separated into three and the group members can communicate with the other members group through leader only.

Note: Image and Description From "Communication Patterns," by © Communication Theory (no date). Available from the WWW at <http://communicationtheory.org/patterns-of-communication/>

The importance of a communication pattern lies in its potential effects on such variables as speed, accuracy, morale, leadership, stability, organization, and flexibility. Studies in communication patterns show that the effectiveness depends on situational factors (Kim, 2012). For example, centralized patterns are more effective in accomplishing simple tasks, whereas decentralized patterns are more effective on complex tasks (Schultz, 2011). In addition, the overall morale of members of decentralized networks is higher than those of centralized networks. This finding makes sense in view of the research indicating that employees are most satisfied with their jobs when they have participated in decision making about them (Pullali, 2012).

Methodology

This study focuses on the impact of learners' attendance to their performance on their participation in Learning Skills for Open Distance Learners course. Learning analytic approach is used to measure the effect of learners' attendance to their performance while undergoing the LSfODL content. Learning analytic is defined as the measurement, collection, analysis and reporting of data about learners and their contexts, for purposes of understanding and optimising learning and the environments in which it occurs (Wikipedia(2015)). The advantages of using this approach are its capability of using enormous data from the system to measure the interaction between the instructors, the learners, and the system. Elias (2011) justified the used of learning analytic as learning is a product of interaction. Depending on the epistemology underlying the learning design, learners might interact with instructors and tutors, with content and with other people. Many educators expend enormous amounts of effort to designing their learning to maximize the value of those interactions. The communication pattern is analysed from the series of interaction in an online forum from three topics; a) Assignment c) Brainstorming and c) Inspiration. The analysis revealed the pattern of communication between the tutor and learner is then matched with any of four communication pattern provided by communication theory.org for the result. The data gained from the system are gathered and used to measure the impact of two important variables; a) learners' attendance and b) learners' performance. Two descriptive data are compared, analysed and observed and organized it into two domains; 1) Learners' attendance and 2) Learners' performance. Both data are then triangulated for a result.

Analysis of Data

Communicaton Pattern

The threads in an online discussion are observed and mapped. Numbers of interactions from the tutors are triangulated to numbers of interaction from students o reveal the type of communication patterns. The mapping of the data reveals the numbers of interaction between the tutor and students in three sessions with three different topics and three different group of students. Table 1 shows the numbers of the frequency of interaction between tutor and students in three different topics.

Table 1: Numbers of Interaction between Tutor and Students in Three different topics

Topic: Assignment		Topic: Brainstorming		Topic: Inspiration	
Tutors	11	Tutor	14	Tutor	13
S1	1	S1	1	S1	1
S2	1	S2	1	S2	1
S3	1	S3	1	S3	1
S4	1	S4	1	S4	1
S5	1	S5	1	S5	1
S6	1	S6	1	S6	1
S7	2	S7	1	S7	1
S8	2	S8	1	S8	1
S9	1	S9	1	S9	1
S10	1	S10	1	S10	1
S11	1	S11	1	S11	1
		S12	1	S12	1
		S13	1	S13	1

Learners' Performance versus Learner's Attendance

The data on students' attendance and performance from three learning centers; Petaling Jaya, Sri Rampai, and Shah Alam are gathered and analyze in Microsoft Excel to reveal the effects of attendance to the exam result. The result is categorized into four categories: A – Excellent, B Good, C – Average and D, DF and F as Below Average. Both data, frequency of attendance and exam result are then triangulated to produce the stack bar graph that represent the effects of attendance on the performance of the students. Table 2 shows the triangulated value of the Frequency of Attendance and Overall Exam Results

Table 2: Frequency of Attendance and Overall Exam Results from Three Learning Centres on OUM.

Attendance / Grades		1	2	3	4
Excellent	A	39	25	10	8
Good	B	30	17	12	1
Average	C	6	5	1	5
Below Average	D / DF / F	3	0	6	8

Findings and Discussion

RQ1: Does the communication pattern reflect the dynamic communication between the tutor and the learners?

Chart 1 shows a Communication Pattern in an Online Forum between Tutor and Learners in the with eleven (n=11) students participated in the forum guided by one (n=1) tutor in Topic: Assignment, Fourteen (n=14) students in the forum guided by one (n=1) tutor in Topic: Brainstorming and thirteen (n=13) students in the forum guided by one (n=1) tutor in Topic: Inspiration.

Each of the students contributes only one message as a response to the tutor. The communication pattern shows only one-way communication between tutor and student. Most of the communication pattern lies under wheel pattern (communicationtheory.org, n.d.)

According to communicationtheory.org, In Wheel pattern, one of the best pattern while compare to other three. The leader has direct contact with all the group members and there are no communication problems, time issue and feedback from the group members. But all the group members can't connect with one another.

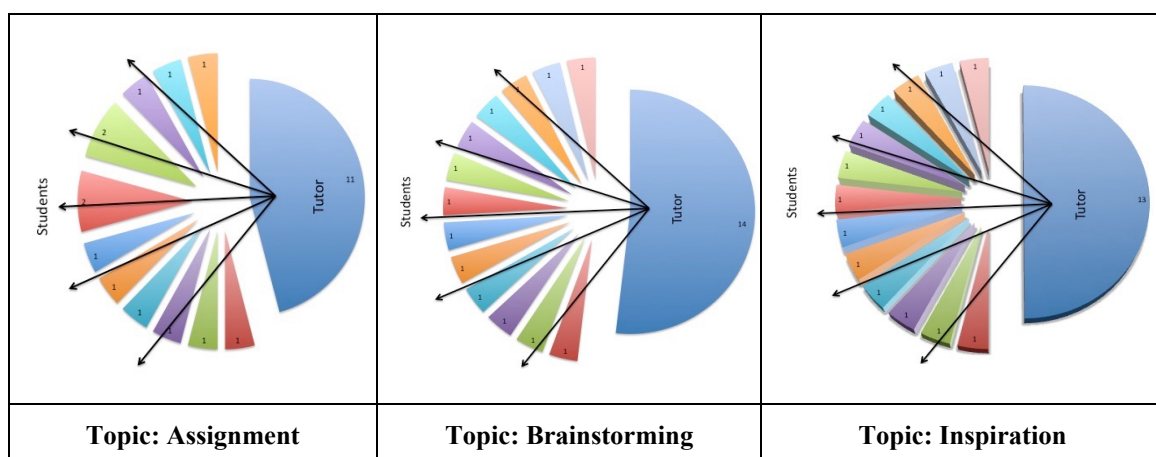


Chart 1: Communication Pattern in an Online Forum between Tutor and Students in three topics Assignment, Brainstorming and Inspiration

The communication pattern yield two significant results:

1. In one way communications, the tutor have full control of the students' ideas but student are not able to communicate with their peers.
2. An inability of the student to communicate with their peers may lead to no expansion of ideas.

RQ 2: Is there any effect on the learner's exam result towards attending the LSfODL course of ODL learner's learning readiness in pursuing their studies?

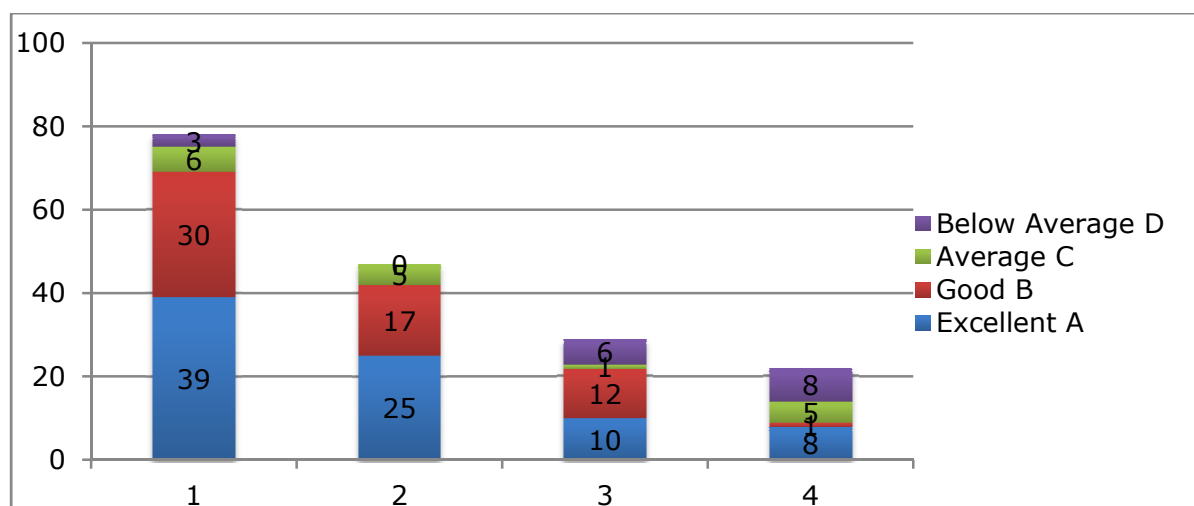


Figure 1: Frequency of Students' Attendance and Exam Result in three Learning Centres, OUM

The figure above shows the distribution of data on the presence of tutorial classes and an examination results obtained for the three learning centre, namely; Petaling Jaya, Sri Rampai and Shah Alam. A total of 22 students who were present for all four tutorials. Among the 22 students, a total of 8 people who scored A and D, while only one and five people respectively obtained a grade B and C during their final exam.

There are 29 students who were present for the three tutorials and from the total, 10 of them have earned a grade of A , 12 students for grade B, 1 student for grade C, and 6 students for grade D.

The number of students who attend two tutorials is the second highest number of as many as 47 people. Of these, 25 students graduated with grade A, 17 students obtained a grade B and 5 students graduated in grade C. No student who obtains a grade of D in this group.

Conclusion

The communication pattern and triangulated data from the learners' attendance and exam result yield three important results:

1. This study identified the learner attendance has no greater impact on their exam performance.
2. One way communication between the tutor and the learners have two pros and cons impact:
 - (i) Pros – high dependance on the tutor have provided fully guided learning.
 - (ii) Cons – no reciprocal interaction between peers in an online discussion.

3. The “Wheel Pattern” is said to be no communication problems, time issue and feedback from the group members (communicationtheory.org, n.d.), means in any topics of discussion, ideas can be expanded by the tutor by giving them the correct learning path and guidance.

This study focuses on the learners’ attendance, and its effect on their performance, more study on the student attitudes in creating dynamic communication should be conducted to enhance the result of this study.

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THE MOTIVATION OF ADULT LEARNING MATHEMATICS IN AN OPEN AND DISTANCE LEARNING ENVIRONMENT

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Abstract

We have always learned in the normal course of our lives, but learning has become informal in our adult lives. However, modern and industrialized conditions require formal education in courses with formal assessment and controlled output. Hence, lifelong learning in an open distance learning environment is seen as an opportunity for adult learners to obtain a formal education. Distance learning and online classes now have changed the way these learners pursue their educations. One characteristic of adult education is that the learners tend to bring with them life experience from their past, especially when learning mathematics. Most of them associate mathematics with the school subjects and unable to recognize the mathematics in their daily practice as mathematics. They normally place a high value on learning mathematics because of its prominent role in their prospective careers, but their learning often requires overcoming personal experience and motivating themselves to learn mathematics again. Many adult learners in mathematics courses feel that they were forced into courses which include mathematics as a compulsory component. This paper reports on the study conducted on a group of adult learners who are pursuing their study in an open and distance learning environment. The aim of this study is to find out about the motivation of the adult learners continuing their study and the perception of these learners in learning mathematics. This paper will discuss learners' perception and motivation to learning mathematics, as interrelated phenomena. Finding from this study will provide helpful insights in understanding the learning process and adaption of adult learners to formal education.

Keywords: *Adult learning mathematics, open and distance learning*

Introduction

In the perspective of lifelong learning, education is experience by adults as a field of tension between felt needs concerning what one wants to learn – or has to learn – and constraints in the form of administrative regulations and financial incentives (Illeris, 2003). Many decades ago, only philosophers and pedagogues discussed the issues of lifelong learning (Aspin, Chapman, Hatton, Sawano, 2001). However, by the end of the 20th century, other parties were also involved in the lifelong learning debates. Lifelong learning became an important aspect of enhancing academic status and solving social and economic problems in industrialized countries. International bodies such as UNESCO, OECD and bodies within the EU declared that education has to be lifelong undertaking (Aspin & Chapman, 2001; FitzSimmons, Coben, O'Donoghue, 2003). Hence, by early 21st century, education is no longer considered to be a process that ends at the beginning of adulthood or as soon as students leave schools. Education is now a continuous process of acquiring knowledge and skills throughout one's life. Education has become a continuous process of acquiring new or modifying existing knowledge and skills. Lifelong learning occurs to meet the demand of new knowledge, due to working demands or self upgrading, and for maintaining employability. Adult education or lifelong learning is now the societal solution to many conditions arising from rapid economy change. However, as an adult learner and distance learners, many learners agree that the most difficult part of studying online is staying motivated. Due to the nature of an open and distance learning, where learners must take their own initiative to complete their courses without the physical presence of lecturers, many learners find it easy to become distracted and discourage in their study.

Lifelong Learning of Mathematics

Presently, mathematics is at the top of the list of subjects considered as basic skill needed in workers dealing with modern technologies. Mathematical skill is needed when dealing with new technology in workplace, in technical application and in work organization. Most of the present discussion of lifelong learning does not generally discuss the role of content. Rather, the discussion is normally on phrases such as globalization and technological development, particularly in information technology. In this paper, first we would like to address this simple question: “Why is lifelong mathematics learning important?” To answer this question, let’s first look at the role of mathematics in society and technology today:

1. Mathematics is the basis of new technologies and plays a central role in their development. As we know, algorithms are the basis of software and materialized mathematical logic is the basis of computer hardware (microprocessors). Hence, these roles give mathematics a central position in processes going on in highly industrialized countries. (Schlöglmann, 2002). In fact, mathematics is the scientific core of the natural sciences and, to an increasing extent, also of social science. (Maasz and Schöglmann, 1988).
2. Mathematics is a tool used to organize our everyday life in society. We used mathematics as a tool in many occupations as well as in making calculated decision. Mathematics is able to provide the tool through mathematical theories and models to a variety of applications and problems solving such as simulating planning in economic, control, automation and construction, politics and social life.
3. Mathematics is a part of our culture. “Democratic principles such as equality, justice and so on need an operational concretization. On the one hand, democracy demands a means for communicating and discussing principles in a rational way. Mathematics, with its close relationship to rationality, is our concept to do this. On the other hand, democracy demands operational procedures for its concrete implementation. Mathematics is again the tool that facilitates this” (Schlöglmann, 2002).

Therefore, the role of mathematics in lifelong learning may be taken to be the following:

- Providing the basis of understanding of new technologies, economic progress and industrial development.
- Inculcating mathematics in the structure our everyday life so that mathematics becomes the invisible tool in many workplace routines and daily practices.
- Developing mathematics competency would be valuable for personal development and fulfillment and should become part of our cultural development.

Hence, does adults' mathematics education matter? I believe that it does. Adults' mathematics education is important on the grounds that adults' mathematics has a bearing on their children's mathematics education and mathematics (i.e. numeracy) can be seen as a 'gatekeeper' regulating entry to work. Number skills and logical thinking are among the core elements in many entry-point tests to job entry and promotion/re-training which most workers will have to take and pass during their working lives.

The Study

This study aims at investigating the perception and motivation of adult learners in continuing their studies, especially in mathematics. A total of 200 questionnaires were distributed to learners who are learning mathematics at two levels, diploma and degree programmes at Open University Malaysia (OUM). The learners are registered to the mathematics course SBMA 1403 (Essential Mathematics) and SBMA 1503 (Algebra and Function) which are compulsory courses for most programmes in OUM. These two courses are offered under the Faculty of Science and Technology OUM. All these learners need to take at least one mathematics course in their programme. The questionnaire items were adapted from existing instruments (Schoenfeld, 1989; Haladyna et. al, 1983). All participants are mature or adult learners aged 24 and above and have spent some time away from schools or formal education and there are active students of OUM in 2012-2013, the period when the study is conducted. The questionnaires are emailed to the students, which was later the students emailed back to the researcher after they have answered all the survey questions. This paper only reports on the results pertaining to the motivation of adult learners, particularly in mathematics.

Results and Discussions

Table 1 gives the results for the motivation of participants towards lifelong learning.

Table 1

Item	Motivation of learners in lifelong education:	Totally agree	Partially agree
1	For financial gain	63.2 %	31.5 %
2	Higher position in organisation	43.7 %	42.1 %
3	Job threatened	17.2 %	12.3 %
4	Improvement of personal education	71.2 %	20.6 %
5	Acquisition of latest professional knowledge	55.0 %	23.7 %
6	Making career change by learning new skills	29.4 %	23.6 %
7	Enjoy learning new skill/subjects	20.4 %	25.1 %

In general, the scores or frequencies for the categories in this motivation in lifelong learning correlate with the type or level of education that the learners are taking. For example, learners enrolled in diploma programme totally agreed that their motivation for embarking in lifelong learning is “improvement of personal education” (82.5%), “for financial gain” (78.2%), “making career change by learning new skills” (65.9%). On the other hand, learners embarking on degree programme cited that their motivation is due to obtaining “higher position in organization” (52%), “acquisition of latest professional knowledge” (57.1%) and “enjoy learning new skill/subjects” (41.5%). Similar to the diploma group, this group also agrees that there are motivated to pursue lifelong learning due to “improvement of personal education” (71.2%). Both groups scored low in the “job threatened” as majority of the learners are already working and feel secure with their current jobs.

With regards to the learners' attitude towards learning mathematics, the percentages are shown in Table 2 below.

Table 2

Item	Motivation towards learning mathematics:	Agree	Disagree
1	always liked solving problems	65 %	16 %
2	always liked memorizing rules	17 %	46 %
3	could never understand math	13 %	72 %
4	terrified of having to study math again	37 %	56 %
5	always hated math because it is too abstract	15 %	69 %
6	always loved math because it stimulate my thinking	42 %	40 %
7	If I can't solve a problem in 10 minutes, I give up	19 %	67 %
8	It is difficult at my age to be a student again	28 %	71 %
9	I was terrified of having to study math again	31 %	57 %
10	I am wiser and more motivated to study math again	46 %	23 %
11	To succeed in math, one has to work hard	86 %	7 %
12	To succeed in math one has to be well organized	71 %	15 %
13	To succeed in math one has to be gifted (born to be good at it)	14 %	69 %
14	To succeed in the course it was necessary to know a lot of math already	47 %	42 %
15	When I entered the course I had poor background knowledge	26 %	52 %
16	In my next math course I'll make sure I understand why the rules work	76 %	3 %
17	I would rather not take mathematics courses if I had a choice	52 %	43 %
18	Mathematics is hard	44 %	57 %

In general, most of these adult learners do not hate mathematics. Though 52% of these adult learners said that they would rather not take mathematics courses if they had a choice, only 31% said that they were terrified of having to study math again. This is probably due to their perception that they could never understand math (13%) and tend to give up when they can't solve a problem in 10 minutes (19%). Some (14%) even thought that to succeed in math, one has to be gifted or born to be good at math. More than half of these learners (69%) have always hated mathematics because it is too abstract. This feeling is supported by their disliked in having to memorize rules (46%) and their perception that mathematics is a hard subject (44%) and they have poor background knowledge (26%). As a result 56% learners said that they are terrified of having to study math again. These perceptions would probably cause low motivation in pursuing mathematics courses.

On the positive note, regarding the learners' attitude towards learning mathematics, a heterogeneous picture emerges:

- They have always been interested in mathematics in school (62% agree)
- They have a good relationship with mathematics teachers (75% agree)
- They have the ability to understand mathematics (57% agree)

This is supported by the finding that most of these learners loved mathematics because they liked solving problems (65%) and mathematics stimulate their thinking (42%). They felt that they are wiser and more motivated to study math again (46%). Hence, the correlation between motivation and claimed ability is high with $R = 0.61$. The learners who are interested in mathematics have ability to understand the subject (80%) and have good relationship with their teachers (83%). 46% of the learners felt that they are wiser and more motivated to study math again and agreed that to succeed in math, one has to work hard (86%) and be well organized

Conclusion

This study reveals that majority of adult learners want to pursue or upgrade their education qualification. The learners' motivations for joining and continuing to attend classes are varied and complex. Some are related to perceived needs within their current employment and feeling that they have a skills deficit in their everyday life. Others are joining in order to gain higher qualification and hoping for promotion later on.

All the learners that participated in this study have had no formal learning since they left school hence some of them anticipate difficulties in pursuing mathematics courses. They feel that formal learning have occurred a long time ago, whereas they recognized that mathematics learning requires process of abstraction and generalization. This study reveals that the learners' motivations to study mathematics again are correlated to their memories of mathematics learning in school, which for many adults the memories are bad. Generally, these adult learners are motivated to pursue their study and the main triggers are to prove that they can succeed in a subject such as mathematics where they have previously experienced failure; and to improve one's academic qualification for their career advancement.

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ANALYSIS THE USE OF SIPAS PLUS TO INCREASE GPA FOR SCHOLARSHIP STUDENTS AT UNIVERSITAS TERBUKA, INDONESIA

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Abstract

After 30 years of existence, Universitas Terbuka (UT) which initially had mature-students has started to have younger students. In June 2015, around 22.51% of students are under the age of 25 years. This tendency is inline with UT policy to broaden its service to younger students. One of the policies is offering scholarships. Academically potential young-students are encouraged to register at UT with scholarships from several sources such as from companies with their Corporate Social Responsibility. The scholarships cover tuition fee and others costs assist students during their studying. To be eligible for the scholarship, student has to be fresh graduates from high school with high GPA and pass selection process. Sistem Paket Semester (SIPAS) is provided to facilitate the student to complete their college timely (4 years). In return, the students have to have minimum GPA score of 2.50 in the first year, 2.75 in the second year to the last year. Once student fails to obtain the required GPA, the scholarship will be stopped. Based on UT experiences and some research, UT is aware that the GPA requirements are not easy to meet. Students need some face-to-face learning facilitation. This is one of the reasons for UT to provide face-to-face tutorial (FtF) for scholarship students in SIPAS. SIPAS is divided into four categories, SIPAS Plus (FtF for all registered-courses and training), SIPAS Full (FtF for all registered-courses), SIPAS Semi (FtF for half of the registered-courses), and SIPAS Non-FtF (No FtF). This research analyzes GPAs from SIPAS Plus, SIPAS Semi, and SIPAS non-FtF. Two types of data were used, all students' final scores obtained from the office of UT's Examination Centre and students perception on FtF implemtation obtained from questionnaires filled-out by 143 samples of scholarship students. The 6 locations of samples were chosen purposively from 37 location offered scholarship. Individual samples were chosen randomly from the six selected location. T-test were employed to examine diffrences between scholarship-students based on the scholarship types and semesters of the students. Results showed that almost in all situation, students in SIPAS Plus have significantly higher GPA than other types of scholarship except in one situation. There was no significant differences between GPAs of SIPAS Plus and SIPAS Semi in the second semester. These results, to some extent, could cause by positive perceptions of SIPAS Plus students towards FTF services.

Introduction

During the last five years, UT experiences shifting in students age. In first 25 years of operation, UT had mostly mature-students. This condition is changed where at present UT has around 16% senior high school graduates in its student population. This shifting is consistent with UT policies to widening opportunities for younger students to enjoy higher education otherwise impossible to afford. Inability to afford higher education is commonly attributed to no universities in the area, no time to come to classes, and no money to pay the fees. UT bridges this demand for higher education and not enough resources to get it by providing scholarship. The scholarship mostly comes from government-own and private entities as part of their Corporate Social Responsibility (CSR) programs. Scholarship is also available form Ministry of Education in the form of Bidikmisi scholarship. Notwithstanding, the grantors requires their grantees to follow some rules, such as graduate timely (4 years) and have minimum GPA score of 2.50 in the first year, 2.75 in the second year, and 3.00 for the third and last year. Students fail to achieve the required scores will automatically be released from the scolarship scheme.

Compared with present means of students GPA (2,19-2,27), UT have to take several measures to anticipate the scholarship-students' required GPAs. The measures include set high academic standard requirements for eligible candidates and provide proper learning support for accepted students. To be eligible for the scholarship, fresh graduates from high school should have good grade. They have to pass academic selection conducted by UT. For some scholarship scheme, economically-disadvantage is one of the reasons to be accepted. However, this paper limits its analysis on scholarship which exclude economically-disadvantage as one of its terms based on bias which could appear on students' performance cause by poverty. Once students are decided and confirmed as grantees, they have the right to utilize all learning support UT provided.

UT support system in the form of tutorial could partially resolve a problem with self-directed learning and efforts to mastering learning materials. One type of learning support is FtF conducted by UT regional office or better known as UPBJJ-UT. FtF are conducted eight times in a semester for a course. During tutorial sessions, students must complete three assignments given at the 3rd, 5th, and 7th sessions. The assignments have to be finish in class during the tutorial session. In FtF, students are required to actively participate in the discussions and assignments. Tutors come from reputable institutions and meet the requirements set forth by UT.

In term of scholarship-students, aware of difficulties scholarship-students faced in implementing self-directed learning and possibility to fail in achieving required GPAs, UT provides SIPAS. SIPAS is an approach for one program where its courses in curriculum are divided into eight semester-packaged. Courses are grouped into certain packages because some students find it difficult to decide how many courses they should take in a semester. Some take too many while some others take too little courses. SIPAS is aimed at facilitating students learning process in accordance to their conditions so that the learning process can be performed optimally and studies can be completed on time. Having this in mind and taking financial consideration of the grantors, UT developed four types of FtF namely SIPAS Plus (FtF for all registered-courses and training), SIPAS Full (FtF for all registered-courses), SIPAS Semi (FtF for half of the registered-courses), and SIPAS Non-FtF (No FtF).

No matter what type of SIPAS students attending, UT guarantess FtF quality by ensuring that the FtF is planned, implemented, monitored, and evaluated in accordance with according to the established policy of the FtF. Some considerations related to students learning support is that learning approaches should vary, interactive, student-centered, as well as trying to meet the preferences of different student and designed according to the principles of transparency and open higher DE according to the guidelines (Simintas UT 2012, Strategic Plan & UT Operational Plan 2010 to 2021).

Tutorial itself is defined as one of learning supports developed to facilitate students in mastering learning materials. In the tutorial, learning activities are facilitated by tutors who take role as a facilitator. In tutorial sessions, students discuss four things:

- Competence essential or important concepts in a course;
- Problems encountered in the student while studying the modules;
- Issues related to practice/practicum; and
- Issues relating to the application of science in everyday life
(UT catalog 2012)

SIPAS programs for scholarship students has been implemented for four semesters. It is time to analyze its effectiveness by comparing GPAs of students in different types of SIPAS. Analysis in this paper will be limited for scholarship-students in three SIPAS programs, namely SIPAS Plus, SIPAS Semi, and SIPAS Non-FtF. Scholarship-students' perceptions of the implementation of the FtF is also analyzed to enrich UT understanding of SIPAS and FtF. Population for this research is all scholarship-students in 37 UPBJJ-UT offered scholarship. For comparing learning achievement in different SIPAS types, all GPA are used. Meanwhile, to analyze students' perception, samples were

used. A number of six out of 37 UPBJJ-UT were chosen as samples purposively to represent UPBJJ-UT size (number of students). The UPBJJ-UT chosen were Aceh, Batam, Jambi, Pontianak, Bandung, and Palembang. Individual respondents in each UPBJJ-UT samples were chosen randomly.

Objective of the Study

The primary objective of this study is to evaluate SIPAS implementation based on students' perception and students' performance. Based on the results, recommendations for the utilization of SIPAS, especially SIPAS Plus, will be developed.

Research Questions

To achieve the study objective, the following research questions are formulated:

“How is students' perceptions toward SIPAS Plus?”

“Have SIPAS Plus been implemented according to its requirements?”

“Is there any significant differences in students' GPAs for different SIPAS types?”

Significance of the Study

This study is significant as the research findings are expected to perfecting UT's student learning services. Results of the study will be useful as input to develop a common strategy to increase the effectiveness of student learning services at UT as well as in other distance education institutions.

Literature Review

Utilizing learning support is not the ultimate goal of being UT students. Its only a mediation to achieve a higher goal: being a self-directed learner. Self-directed learner, according to Malcolm Knowles (1975: 18), is an individual who “.... take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material resources for learning, choosing and implementing appropriate learning strategies, and evaluating learning outcomes”. Self-directed learning can be done individually or in groups, both in the study group and in tutorials.

With all learning support provided, Universitas Terbuka (2012) found out that UT students often face difficulties to mastering learning materials and achieve target competencies because of they have not yet familiar nor implement self-directed learning. This difficulty may because of the students still have their traditional pedagogy instead of embracing andragogy. Knowles (1984) mentioned that andragogy was premised on at least five crucial assumptions about the characteristics of adult learners that are different from the assumptions about child learners on which traditional pedagogy is premised, as follows.

1. Self-concept: As a person matures his self-concept moves from one of being a dependent personality toward one of being a self-directed human being
2. Experience: As a person matures he accumulates a growing reservoir of experience that becomes an increasing resource for learning.
3. Readiness to learn. As a person matures his readiness to learn becomes oriented increasingly to the developmental tasks of his social roles.

4. Orientation to learning. As a person matures, his time perspective changes from postponed application of knowledge to immediacy of application, and accordingly his orientation toward learning shifts from one of subject-centeredness to one of problem centeredness.
5. Motivation to learn: As a person matures the motivation to learn is internal

(Knowles, 1984).

Meanwhile, Thompson (1999) found that successful distance education (DE) students have these characteristics.

1. **Internal locus of control**

Learners at DE system has more internal locus of control than learners in face-to face learning systems. Internal locus of control is beliefs that arise as a result of a person's behavior and undertakings.

2. **Independent**

DE students is independent and able to manage learning and succeed in his studies. Nonetheless, this does not mean they are interested to learn independently because they are they still need clear rules and explicitly tell about how they learn. Only with clear guidelines, they will be able to apply the self-learning.

Distance learners tend to be more intelligent, emotionally stable, trustworthy, compulsive, passive, introverts than on face-to-face learners.

3. **Learning styles**

Almost all studies have found no link between sensory learning styles (i.e. auditory, visual, or tactile) with learners' tendency to enroll in DE and tendency to succeed in the system.

However, some research has found that DE learners have fewer concrete learning styles, which shows that they are able to learn different types of learning materials and a variety of activities. DE learners also tend not to need relationships with fellow learners compared to learners face to face.

Distance education initially attractive to those who live far from education institution. Currently, comfort to not have to come to specific place at a particular time is also still one of the reasons people join in distance education. Communication problems often found in educational. Therefore, discussing distance education students should be meant discussing mature students with certain characteristics which could help them success in their study. However, not many distance education students fall into this category. Therefore, students support is needed. One of many efforts to facilitate students is by utilizing technology. Advances in technology open up many possibilities for the communication model of DE. Institutions that implement DE's system can be overcome with advances in communications and information technology. The technology can then be used by students to communicate more intensively with other students and with tutors (Educational Benefits of Online Learning, 1998). Students are also increasingly aware of the learning processes which are then used to expand their learning horizons (Yuan & Gay, 2006). If the course is designed in an optimal situation, and the performance of tutor in doing tutorial are good, this may affect the level of learner satisfaction (Sinclair, 2013) and Herman (2012). Furthermore, Stanton (2001) and Olszewski-Kubilius & Corwith (2011) found that ease intensive communication with the tutors can enhance the learning spirit. UT utilization of communication technology in the form of online tutorial could benefit students. The difficulty to fit students' need of FtF is in the perception about FtF. Mercy (2014) found out that students apathy of FtF rooted from poor perceptions on FtF and tutors tend to lecture as in face to face to face teaching.

Methodology

This research used content analysis to analyze students' perceptions of SIPAS Plus and statistics descriptive to analysis GPA in different types of SIPAS in scholarships' students.

Research Design and Sample

The population in this study were all students using SIPAS service, consists of CSR and Bidikmisi scholarships. Sample drawn from 6 UPBJJ-UT: Jambi, Bandung, Palembang, Pontianak, Batam, and Aceh; presenting of students using SIPAS Plus with a GPA of high, medium, and low. Data to determine students' perceptions of service were taken from questionnaires and interviews with students, Coordinator of Student Support Service, and Head of UPBJJ-UT.

To analyze whether SIPAS Plus services can increase the value of the GPA, these secondary data were used.

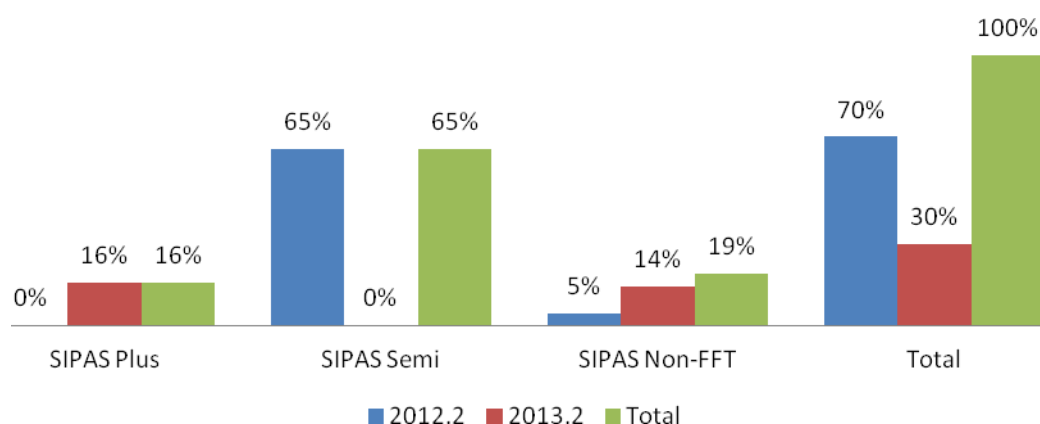
- GPAs from semesters 1 through 4 for scholarships student in SIPAS Plus registered at 2012.2
- GPAs from semester 1 and 2 for scholarships student SIPAS Plus registered at 2013.2
- GPAs from semesters 1 through 4 for students with non-TTM SIPAS services

Data Analysis

1.1. Scholarship-Students' GPA

All 4,764 GPAs of 706 scholarship-students from 6 UPBJJ-UT were used to examine differences between GPA SIPAS types. T-test between SIPAS types is conducted to compare students' learning achievement based on FtF, SIPAS Plus, SIPAS Semi, and SIPAS Non-FtF. T-test were also administered between semesters to analysis the differences between students' learning achievement in different semesters. While comparison between SIPAS type could enlighten us on the comparison between semester could show how course load affect GPAs.

All 706 scholarship-students firts registered 2012.2 – 2013.2 semester are registered in six study programs from three faculties, namely Faculty of Natural Science & Mathematics (Agricultural Extension, Environment, Statistics), Faculty of Social & Political Sciences (Communication Science), and Faculty of Economics (Management, Accountancy).



Graph 1: Distribution of Scholarship-students based on SIPAS Types & Semester of First Registration (N= 706)

Using t-test, combinations of scholarship-students in the three types of SIPAS in the first, second, third, and fourth semesters of study are examined. Meanwhile, results for the t-test is presented in Table 1. Seven from eight combination of SIPAS Types and semesters show statistically significant differences between the means. Means of GPA of scholarship-students in SIPAS Plus in every semester and in total length of study proven to be higher than those in other types of SIPAS. Meanwhile, only in semester 2, means of GPAs of scholarship-students in SIPAS Plus same with those in SIPAS Semi.

Table 1: Number of Observation, Mean, and Variance in each SIPAS Types and Semesters

Semester	Statistics	SIPAS Plus	SIPAS Semi	SIPAS Non-TTM
1	Observation	111	461	134
	Mean	2,77	2,46	2,12
	Variance	0,29	0,19	0,35
2	Observation	220	454	113
	Mean	2,44	2,39	2,07
	Variance	0,49	0,22	0,50
3	Observation	407	-	50
	Mean	2,68	-	1,79
	Variance	0,41	-	0,57
4	Observation	384	-	48
	Mean	2,80	-	1,83
	Variance	0,52	-	0,62
Whole	Observation	1122	915	345
	Mean	2,68	2,43	2,01
	Variance	0,47	0,20	0,48

Table 2: Results of t-test in different Combination in SIPAS Programs (Hypothesized Mean Difference = 0, α 0.05)

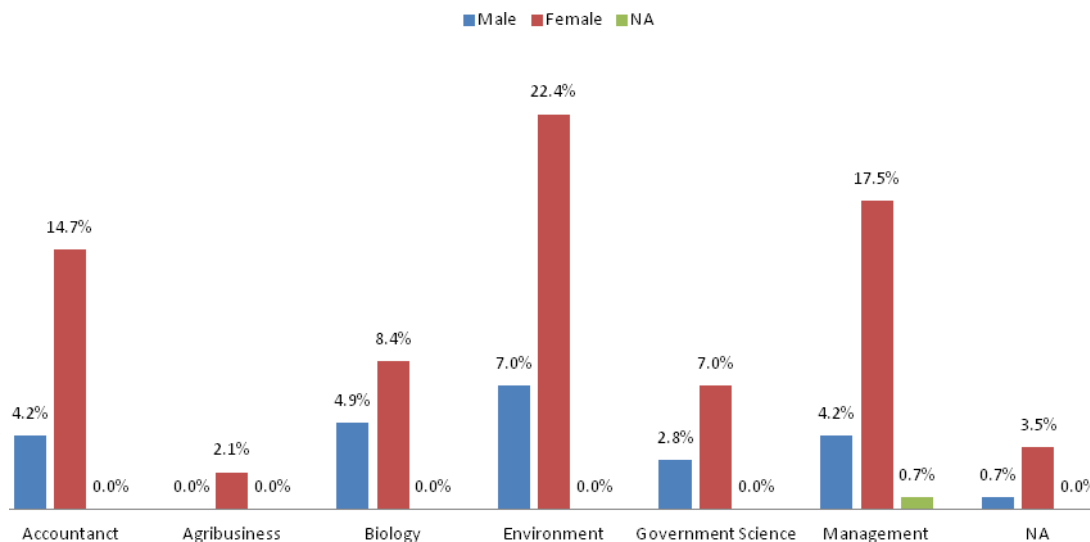
Semester	Statistics	Type of SIPAS		
		SIPAS Plus & SIPAS Semi	SIPAS Plus & SIPAS Non-TTM	SIPAS Semi & SIPAS Non-TTM
1	df	146	241	176
	t Stat	5.72	9.08	6.24
	P(T<=t) one-tail	2.94E-08	1.96E-17	1.59E-09
	t Critical one-tail	1.66	1.65	1.65
	Decision	Reject null hypotheses	Reject null hypotheses	Reject null hypotheses
2	df	319	224	138
	t Stat	0.85	4.51	4.61
	P(T<=t) one-tail	0.20	5.23E-06	4.46E-06
	t Critical one-tail	1.65	1.65	1.66
	Decision	Accept null hypotheses	Reject null hypotheses	Reject null hypotheses

3	df		58	
	t Stat		7.98	
	P(T<=t) one-tail		3.28E-11	
	t Critical one-tail		1.67	
	Decision		Reject null hypotheses	
4	df		57	
	t Stat		8.14	
	P(T<=t) one-tail		2.03E-11	
	t Critical one-tail		1.67	
	Decision		Reject null hypotheses	
Whole Semester	df	1957	565	459
	t Stat	10.16	15.73	10.24
	P(T<=t) one-tail	5.95E-24	8.76E-47	1.30E-22
	t Critical one-tail	1.65	1.65	1.65
	Decision	Reject null hypotheses	Reject null hypotheses	Reject null hypotheses

Therefore, UT has to take certain measures to overcome this barrier such as providing intensive training to prepare students to engage in DE. In addition, UT could motivate students' to self-learning by presenting success stories from alumni.

1.2 Scholarship-students Percpetion on the FTF Implementation

To analyze the students' perception on the implementation of FtF in SIPAS Program, a number of 143 students served as samples. The students were from six UPBJJ-UT chosen, Aceh, Batam, Bandung, Palembang, Pontianak, and Jambi. Most of the respondents were female (75,5%). Based on study programs, majority of the students were from Environment study program.



Graph 2: Respondents' Distribution based on Study Program

Discussion

1.1. Scholarship-Students' GPA

The difference between the various types of SIPAS lies in the difference in the number of FtF. Therefore, based on the results, it can be concluded that the greater number of courses completed with the FtF, the higher learning outcomes. Findings that FtF still affect students' GPAs reflects that scholarship-students have not yet had a characteristic of andragogy as mentioned by Knowles (1984) such as self-concept which is reflected in moving from one of being a dependent personality toward one of being a self-directed human being. In other word, fresh graduate students have not ready for directed-learning. This finding also contradicts Thompson (1999) belief that successful DE students are more introverts than on face-to-face learners. While Tait (2003) said that students look for the flexibility that ODL offers, especially freedom from time and place that is restricted by convention-al part-time study, and they do need student support

1.2. Scholarship-students Perception on the FtF Implementation

As stated in UT Catalog 2012, during FtF students have to actively involved in the discussions. In order to be able to do that, students have to read related modules first. Therefore, having modules is amust for every students. In terms of modules delivery, all students stated that they have recieved all modues prior to the first FtF session. In the eprocedure of delivering modules, UT has tergetted that students should recieve the modules at least two weeke before the first FtF session. However, only 46% respondents received their modules on time. Other respondents recieve the modules one week before the fist session of FtF. This situation could be rooted from the unpredictable number of new students since students tend to register right by the end of registration day. Hence, time to prepare the delivery such as preparing and printing the modules is limited. In addition, sometimes, it is difficult to predict time require to deliver the modules to students. Based on these findings, UT has to be more strict in the registrstion process. It is also be necessary to provide more time in delivering the modules and at the same time increase monitoring and control of the delivery.

Meanwhile, information about FtF were provided in time. Majority (66%) respondents mentioned that their recieve information onh FtF schedule two week prior to the first session of FtF. Students need the schedule in order to prepare their time and materials for the FtF. In addition, students also need the information so they could know the location of FtF. Majority of respondents (92,3%) mentioned that FtF could be conducted at UPBJJ-UT offices. Meanwhile, 80% respondents believed that FtF have to be cocducted at UPBJJ-UT office. However, FtF should also be conducted everywhere. Choices of location for FTF to some extend reflects scattered domiciles of the respondents. UT regulation on FtF allows UPBJJ-UT to conduct FtF everywhere.

In terms of tutors, respondents' spoke highly of them because the tutors come from relevant study program and able to conduct the FtF. Respondents' perception on the ability of tutors in managing FtF is not inline with UT regulation of role of tutors in FtF. UT states that tutors have to take roles as facilitators not lecturers. Findings that reflects non-confirmity in the role of tutors has to be addressed by UT by providing training for tutors and administer more intensive monitoring and evaluation.

During FtF, several topics were discussed. Majority of respondents (98%) stated that they only discuss topics covered in modules while 84% respondents stated that they also discussed topics outside fo the moudles. This rather odd number could occur because the respondents have to express their perceptions on several courses. It could happen that there is differences in choosing topics based on courses which is not analyzed in this paper. Other than discussions, respondents should also engage assignments. A number of 72% respondents carried out their assignments both in group and individually while only 22% and 6% respondents carried out the

assignments individually and in group. Almost all respondents (98%) doing their assignments during their FtF sessions and this is inline with UT regulation.

Conclusion

SIPAS Plus has proven to be effective in facilitating students learning process as shown in the highest GPAs between three types of SIPAS. In all combination of SIPAS types and semesters, SIPAS Plus always has statistically significant highest mean of GPA. These findings, while satisfying students' need to achieve high GPA, could cause problem in UT efforts to promote students ability in self-directed learning. Therefore, UT needs to limit the implementation of SIPAS Plus. SIPAS Plus could be implemented in the firsts four semesters but eventually SIPAS Plus should be replaced by SIPAS Semi or SIPAS Non-TTM.

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EXPLORING THE RELATIONSHIP BETWEEN LEARNING STYLES OF TRAINEES AND HEALTHCARE EDUCATION DELIVERY MODES: DEVELOPING NEW STRATEGIES FOR BETTER HEALTHCARE EDUCATION PROGRAMMES IN SRI LANKA

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Abstract

The prevalence of different learning styles vary between traditional learning and distance learning modes among students and learning styles can also vary according to a selected set of demographic factors (Diaz & Carnal, 1999). It is important for an institute to identify the prevalence of learning styles among its students to decide on resources and fund allocation. This study categorized health care students studying at private healthcare education institute in Sri Lanka, according to their preference and use of individual learning styles. Further it also described those styles separately for traditional learning and distance learning mode students. A descriptive cross sectional study design was used on 320 students at the private healthcare education institute. A self administered questionnaire evaluating demographic information and including Felder-Soloman Index of Learning Styles was used. Both descriptive and analytical statistical methods were used to analyze the data. Study also investigated relationship between learning styles and preferred learning practices. Using statistical data analysis this study explored and looked at the relationship between student performance and the gaps in addressing of learning styles in material and delivery of a selected module. This research revealed that reflective, intuitive, verbal and global are the most strongly preferred learning styles among students at private healthcare education institute in Sri Lanka. Except the verbal learning style, others did not vary significantly between traditional learning and distance learning students. Further it was confirmed that students' performance in healthcare education has a direct and negative relationship with the gap in fulfilment of learning style. And also learning related practices has direct and positive relationship with the students' learning style. By analysing the results the statistical analysis disapproved the hypothesis of students' performance in healthcare education has direct and positive relationship with the learning related practices. Based on the findings of the study, it is recommended that materials and teaching methods should grater reflect students learning styles further it is clear at the institute the emphasize on materials and methods should focus on the reflective, intuitive, verbal and global, as opposed to active, sequential, sensing and visual approaches.

Keywords: Learning Styles, Healthcare Program, Performance, Delivery Method, Traditional learning Study, Distance Learning Mode

Introduction

The manner in which individuals choose to or are inclined to approach a learning situation has an impact on performance and achievement of learning outcomes (Cassidy, 2004, p 419 - 444). As per the study conducted by Donna (1990) on the effects of preferred learning style variables on student motivation, academic achievement, and course completion rates in distance education there was difference in achievement of course knowledge between subjects learning within an instructional environment that matches their primary learning style preference and subjects learning within an instructional environment that does not match their primary learning style preference. Learning style assessments provide an opportunity to learn as preference to respond under different circumstances and to approach information in a way that best addresses a student's particular needs (Romanelli & Bird, 2009). By analyzing different learning styles of individuals, it can be propose new information and strategies which can be adopted for effective learning (Huston & Cohen, 1995).

Objectives of the Study

The primary objective of this study is to assess the variation among learning styles according to a selected demographic factors. The findings would also demonstrate the prevalence of visual learners among the students. The specific objectives were:

1. To describe the prevalence of different learning styles among traditional learning and distance learning mode health sciences students at private healthcare education institute
2. To describe the variations of learning styles according to a selected set of demographic factors
3. To describe the different study patterns and preferred study habits among the students
4. To describe the variations of learning styles according to study patterns of students
5. To identify associations between learning styles according to a selected set of demographic factors
6. To identify associations between learning styles according to study patterns of students
7. To describe the relationship between student performances and the learning style.
8. To identify the problem of student's performance is based on their absorption level or the delivery method.

Research Questions

The research focus was to find answers to the following questions, which would lead to identify and propose solutions to improve student performance at private healthcare education institute.

- (a) To what extent are the findings of the Monash University context applicable to the Sri Lankan context?
- (b) What are the differences (if any) in learning styles between traditional learning and distance learning part Time healthcare students at private healthcare education institute?
- (c) To what extent is there a need of new facility requirements which will cater for the students' learning styles?

Significance of the Study

Much research has been carried out outside of Sri Lanka to identify students' learning styles and the impact on teaching learning style which matters to outcome of the study program as well as to make the program more interesting to follow with less stress for students. As per the research conducted by Rhunu University, Sri Lanka there are significant differences among learning styles in different programs (Rupasinghe & Buddhika, 2003).

Felder and Spurlin developed a learning style in 2005 which proposed four learning style dimensions named as active/reflective, sensing/intuitive, visual/verbal, and sequential/global (Brown, Zoghi, & Tangerine, 2009).

Active learners have a tendency to discuss and apply it where reflective learners are tend to make notes in own words to retrieve information. Sensing learners have a tendency to like learning facts, whilst intuitive learners prefer discovering possibilities and relationships. Visual learners retrieve information based on their observation, while 'verbal' learners' retrieve more out of words. Sequential learners' retrieve information by following logically from the previous one. Global learners retrieve information by absorbing material almost haphazardly without considering connections (Felder & Silverman, 1988).

As a developing country it is important for Sri Lanka to identify the need and improve different ways to gain better outcome from the students who are following healthcare programs. The studies which are conducted regarding above in many countries may not always be applicable for the Sri Lankan context. The findings of this research will benefit the students, parents of the students, the institutions as well as for the country which will generate professionals who will support the economy of Sri Lanka. And also it is necessary to know the most preferred methods of learning and related activities of their students in order to decide the patterns of expenditure for different subject streams, and different courses (Samarakoon, Fernando, Rodrigo, & Rajapakse, 2013).

Literature Review on Student Learning Styles

Previous studies indicate that Neuroscientists have discovered that 30 – 60% of brain functioning capabilities are from inheritance and 40 – 70% is environmentally dependent (Martin, 1999). Therefore, in order to maximize learning for students, teachers can provide positive learning conditions through climate setting and by supplying appropriate experiences (Dunn, Thies, Honigsfield, 2001).

A previous study done on the impact of multiple representations of content using multimedia on learning outcomes revealed that innovative educational technologies provide valuable opportunities for educators to design an enhanced, interactive, more inclusive and engaging curriculum (Birch, Sankey, & Gardiner, 2010).

A study confirms that Felder – Soloman Index of Learning Styles can be used to assess reliability, factor structure and construct validity as well to determine whether changing its dichotomous response scale to a five option response scale would improve reliability and validity. The factor analysis and direct feedback from students on whether they felt their scores accurately represented their learning preferences provide evidence of construct validity for the ILS. Changing the response scale improved reliability, but it did affect the strength of the evidence for construct validity based on student feedback (Litzinger, Lee, Wise, & Felder, 2007).

The findings of the research on the relationship between school inputs and student outcomes, the quality of the teacher demonstrated has a very strong relationship with student achievement (Harris & Keuren, 2009).

Prashnig (2005) points out the differences between learning styles vs multiple intelligences revolutionary approaches to teaching and clarifies the confusion which often exists when classroom teachers attempt to introduce new strategies. Learning styles and multiple intelligences are certainly not interchangeable. Students with similar intelligence factors in the multiple intelligence framework can have vastly different learning styles, based on their personal biological makeup and their individual conditioning. Developing strategies are more useful and effective and learning become more enjoyable for students who struggle in traditional classrooms.

The research were conducted in Predominant Learning Styles and Multiple Intelligences of Postsecondary Allied Health Students program to describe the learning styles and multiple intelligences of students in postsecondary allied health fields. Participation in four of the six allied health programs showed the strongest preference for highly structured learning activities. All of the six groups reported interpersonal and intrapersonal intelligence as the two most dominant intelligences. A one-way ANOVA was used to test the differences in learning styles based on age. In some of the age groups significant differences in learning styles occurred. The data indicated there were no statistically significant differences in multiple intelligences based on age.

A study explored the learning style preferences of a group of twenty registered nurses undertaking a structured learning program in intensive care. Learning strategies used in this program were also explored to enable comparison between preferred learning styles and strategies. Exploration of individual learner preferences and learning strategies was undertaken using the Index of Learning Styles (ILS) devised by Soloman & Felder. Results from this study showed that there were some significant differences between individuals' preferred learning styles and the learning strategies used in the program. As per the research it is envisaged that the benefits of this enhanced and individualized support for learning could have a positive impact on nursing staff recruitment and retention for the organization involved (Wetzig, 2004).

Methodology

Proposed Conceptual Model and Hypotheses

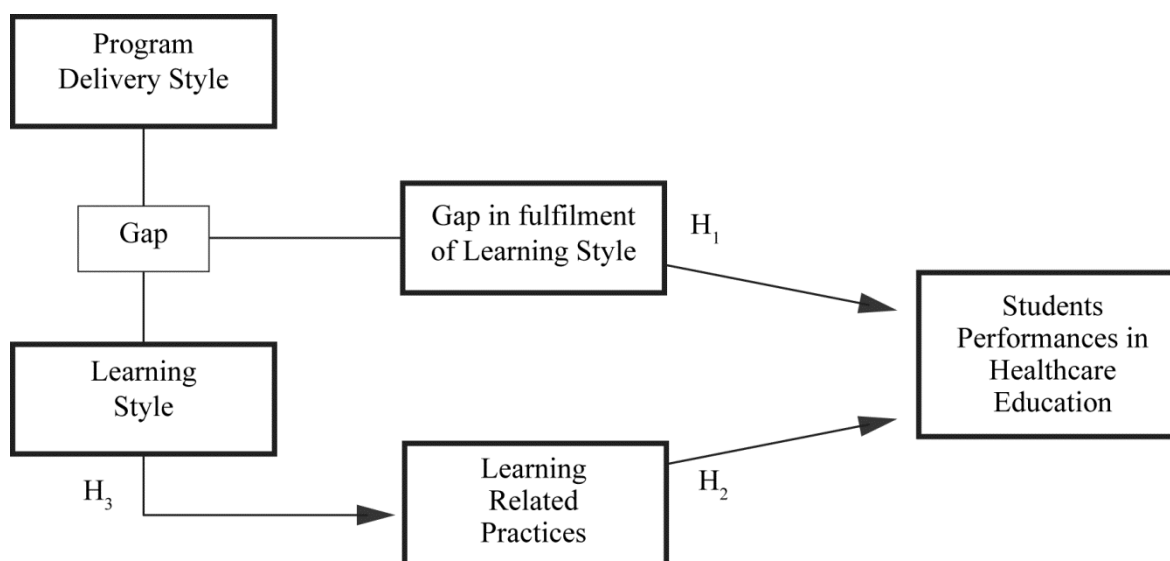


Figure 1: Conceptual Framework of the Study

The hypothesis derived is as follows:

- H1** – Students' performance in healthcare education has direct and negative relationship with the gap in fulfillment of learning style.
- H2** – Students' performance in healthcare education has direct and positive relationship with the learning related practices.
- H3** – Learning related practices has direct and positive relationship with the students' learning style.

Research Design and Sample

The research sample comprises students who are enrolled for the certain healthcare programs such as nursing, physiotherapy, bio medical and health administration at International Institute of Health Sciences. For an effective delivery of programs, the private healthcare education institute needs to match their students' best learning preferences and the actual learning habits with the available resources (Harris, 2009). To improve the quality of the program delivery, the institute intends to annually increase its financial allocation for the expenditures related to the same.

The research has a descriptive cross sectional design by using stratified random sampling. This will be important to help understand the in depth analysis of information and present a complete research. Both male and female between the ages 17 – 45 will be the categories of study that are enrolled for traditional learning or distance learning mode programs. Out of 320 student population the sample size selected are 199 students from face to face students and 121 from distance learning mode students.

For traditional learner, online component is a supplementary resource and use more for administrative purposes. Such as referring notices, checking time table, making online submissions and etc. whilst distance learners online component comprise a key resources for learning. Such as increased access to electronic data bases, discussion forums and referring learning materials.

Questionnaire

The research instrument was used in English version for qualitative analysis through the self-administered questionnaires which consist of 12 statements to assess demographic and behavioural information.

While the quantitative analysis conducted in depth study of relationships of learning styles through the questionnaire distribute among the selected students list. The standard questionnaire (Felder & Soloman, 1998) consist of 44 statements in a systematic order and it is sub divided to two sub dimensions (a, b).

There are eight groups of styles but each two styles related to each other named as Active/Reflective, Intuitive/Sensing, Verbal/Visual, Global/Sequential.

Ethical Consideration

The permission was obtained to access to the field from IIHS ethical committee before attained participants' voluntary involvement in tool completion. The purpose of the study were explained to the students and guaranteed anonymity and confidentiality.

Statistical Method

Descriptive and frequencies on the items of the sub dimensions of the scale were found. Statistical test such as ANOVA and Chi-Square were also performed in order to examine differences among the various group.

Data Analysis and Interpretation

Healthcare students engaged in traditional learning accomplish self-studies at night than morning. This is understandable because the distance learning mode students who work on shift basis would at times get to study in the morning whereas the traditional learning students who attend lectures during the mornings get to self-study only at night.

With regard to the main learning style categories in the ILS, 78.14% of students were found to be in reflective category and 21.86% of students were in active category. 71.58% of students were found to be in intuitive category and 28.42% of students were in sensing category. 68.85% of students were found to be in verbal category and 31.15% of students in visual category. Regarding global or Sequential category, 81.97% of students in global category and 18.03% of students were found to be in sequential category. The findings of this study contrast with a study done on health science students in Monash University, Australia which has revealed the results as on the 44% of health science students as being active learners, 60% as sensing learners, and 64% as sequential learners (Ted Brown, 2009).

Therefore the results obtained from this category are quite different from those from a student group studying similar subjects but with a different background and a set of facilities. The reasons for the difference may be many and vivid. But this proves the validity of generating local data for a specific intervention than just going by the global trends.

Also this study revealed a lot of interesting facts about the usage of study material and learning media. It showed that material usage does not depend on any learning style category and not even among visual and verbal learners. Felder and Spurlin themselves explain this in one of their reviews on the reliability of ILS as “Learning styles preferences can be affected by a students learning experiences” (Rochard M Felder, 2005). Therefore the traditional Sri Lankan school teaching methods and learning habits must have had an influence on this. It was rather surprising that the visual methods did not attract the use of multi-media more. So this remains a point for further investigations.

However it was revealed that most of the students prefer hand-outs and power-point materials than other materials irrespective of age groups. Out of all, the younger students who entered full time programs were also more likely to use a wide range of audio-visual material. So this clearly isolates a group of students; the younger ones who do full time programs as a group for whom audio-visual facilities should be focused on; therefore invested upon.

The Chi-Square test which has a likelihood ratio of 19.580 with 4 degree of freedom between the program category and learning material cross tabulation implies that traditional learning program students use power point much more (66) than distance learning mode students (26).

Further (13) out of the distance learning mode (69) students like to study using videos. Therefore it is advisable to focus on power point presentations more for the traditional learning students and also to make the video facilities available for the distance learning mode students.

This study found clearly that Active learners like to do group studies more. This is well in keeping with the description of the learning style by Felder and Soloman. (Richard M. Felder, Active and Reflective Learners, 2002). This confirms the validity of this application and also leads to clear indications to facilitate group activities both in terms of financial allocations and also in their future program modifications.

As most reflective learners strongly prefer that style of learning, emphasise that the programs should be qualitatively changed to suit this preference of reflection as otherwise they will not be able to learn properly as they are with a strong preference for the style.

Further, the hypothesis (1) and (3) were confirmed that students' performance in healthcare education has a direct and negative relationship with the gap in fulfilment of learning style and also learning related practices has direct and positive relationship with the students' learning style. In order to prove both hypothesis students' performance in one common subject which is taken by both traditional learning & distance learning students was selected where the teaching methodology has addressed in a comprehensive range of learning styles.

In order to assess the relationship between student performances and the learning related practices one common subject was selected where the teaching methodology can be considered as same for both traditional learning & distance learning mode.

Refer to Table 1 Research subject activity allocation.

ILS Category	Teaching/ Learning Activities	Percentage Involved
Active	Assignment, Reflections, Lab Demonstrations	10
Reflective	Assignment, Reflections, Reading materials	15
Global	Assignment, lab demonstration	10
Sequential	Study guide, Reading materials	5
Sensing	Lectures, Lab demonstration	10
Intuitive	Reflections	5
Visual	Powerpoint, Video, Reading material	25
Verbal	Lectures, Lab sessions	20
		100%

According to the results, only the positive gaps (S) which indicate that the requirement of the student has not been fulfilled in order to verify the mentioned hypothesis.

Conclusion and Recommendation

This research revealed that Reflective, Intuitive, Verbal and Global are the most strongly preferred learning styles among students at private healthcare education institute, Sri Lanka. Other than the verbal learning style, others did not vary significant between traditional learning and distance learning mode students.

This study revealed a lot of interesting facts about the usage of study material and learning media. Most reflective learners strongly prefer that style of learning. Therefore more than in spending for the programs, the programs should be qualitatively changed to suit this preference of reflection as otherwise they will not be able to learn properly as they are with a strong preference for the style.

This study found that even the visual learners' preference was not for visual study material. This is an exceptional disparity that needs to be investigated further. It postulated that it could be a problem with the material itself. More interestingly it could be that the learning style of the student does not dictate their preferences for materials. On the other hand there might be issues with the relevance of the material with regard to the course content and especially with regard to the final evaluations.

Traditionally in most university lectures, little visual information is presented other than *PowerPoint* slides or overhead projector sheets. Students mainly listen to lectures and read material written on boards and in textbooks and handouts (Brown, Zoghi, & Tangerine, 2009). The research recommended conducting a detailed analysis of the current financial allocations on resources at private healthcare education institute – considering all costs and the allocations should be categorized under the 8 sub-dimensions of ILS's styles. It also recommended that the results of this study should be matched with the above and future finances should be dealt.

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LEADERSHIP IN ODL: A 360 DEGREE FEEDBACK

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Abstract

Leadership in any organization, be it public or private, corporate or educational, plays an important role in its effective working. The same holds true for open and distance education. Open and distance education still has vast horizons to emerge from, for which effectiveness of leadership becomes very critical and can be studied through roles that a leader at ODL performs. Much work has been done on leadership in ODL but there is a dire need for the leaders of ODL to assess their leadership practices at individual level so that areas of improvement may be identified and converted into strengths. This study focuess on assessing the leadership from 360 degrees by an evaluation of four roles that a leader performs which include master strategist, change manager, relationship/network builder, and talent developer. Common assessment framework (CAF) has been used as a tool for this purpose. Data has been gathered from all tiers of an open and distance education institution of Pakistan. This study is of practical importance in improving the efficiency of processes under the guidance of the leadership at ODL.

Key words: *Leadership in ODL, Roles of Leadership*

Introduction

Leadership is critical in effectively implementing the objectives of any organization including public, private, service or product oriented, corporate or educational institution, conventional or open distance learning institution and so on. The initiation and implementation of the organizational transformation in the form of flatter and looser, horizontal structures is widely credited to leadership. Many researchers (Almansour, 2012; Belias & Koustelios, 2014; Voon, Lo, Ngui, & Ayob, 2011) relate leadership with job satisfaction and motivation, thus emphasizing the role of leadership in overall organizational performance.

To manage the transformation process in organizations, change-oriented leaders are strongly needed. Developing clear vision, one which inspires and provides a strong motivational force to the followers is considered worthy by researchers.

It is also concluded by Anderson and King (1993), that besides a participative leadership style, innovation is most likely to be promoted by a clear vision or mission.

Literature Review

Leadership is a well-read topic and there is humongous data available on it. Great leaders lead while having the best interests of their employees in mind along with the unique needs of the organization in consideration. The leader must himself be successful and should also bring success to the organization and its employees (Kritsonis, 2004).

The changeover process in organizations is also facilitated by leaders (Howell & Avolio, 1989) who enhance the skills and confidence of followers towards innovative and creative responses, and to take risks. Leadership affects the overall work motivation of administrative employees in higher education. It is particularly seen in case of university organization (Rawung, 2013).

The Conference Board report “Developing Business Leaders for 2010” identified four vital roles to meet challenges and the career derailers in the business (Barrett & Beeson, 2002). These four roles include formulating master strategy, managing change, building relationships and political networks, and developing talent. So even in future, the role of a leader will revolve around making strategies and providing directions, building strong ties with the politicians and stakeholders so as to ascertain shared responsibility, skill and talent development of the followers and managing change (Rathnayake, 2010).

In the current study, effectiveness of leadership has been studied through the above mentioned roles that a leader performs. The study has been conducted in the academic sector as a lot of research related to Organizational Behavior has been performed in the corporate sector, but academic sector comparatively remained unattended.

It is found worthy to study leadership in the academic sector so as to highlight the effectiveness of leadership which may later open horizons helping bring the required change towards improvement. It is also generally taken to be true and proved through researches that leadership is the most important factor in the academic scenario for schools, colleges and universities to succeed or fail (Simkins, 2005). Importance of leadership of academics has been emphasized by Rhodes, Brundrett & Nevill (2008).

As understood by the definition given by Winston & Patterson (2006), a leader has several characteristics, which distinguish him from the rest of the people. Besides providing direction to the employees by setting its vision, mission and values, it is the responsibility of a leader to inculcate these values in the employees so that the organization becomes an integrated whole. A leader motivates and supports the people; develops and implements a system for managing the organization, its performance and change, keeping in view the organizational strategy. Effectiveness of leadership depends upon and is mostly judged by the leader’s ability to motivate the followers (employees) (Shamir, Zakay, Breinin, & Popper, 1998). A leader first creates within employee a commitment to the organization and then strives to take it to the next level (Bass 1985; Conger and Kanungo 1998).

In higher education institutions, leadership is not just all about a single authoritative entity, but it also very significantly caters to the needs and ambitions of both leader and followers and what they expect out of this relationship (Bryman, 1992). Similarly, the roles a leader performs in Open Distance Learning (ODL) institutes in the current scenario demands a leader to lead, motivate and show direction to entities led by him, (Majoni and Kasowe, 2011) in order to transform and bring a collective change. Cuthbert, while exploring the leadership challenges faced by programme coordinators at Zimbabwe Open University, stressed that an effective leader is the one with vision and direction. He must be a critical and strategic thinker which should enable him of sketching a very effective mission and vision. He must also be a problem solver, should be dependable and honest, self-confident, and be able to turn his weaknesses into strengths.

Objectives of the Study

- To assess the current leadership practices of open distance learning institution, to determine its effectiveness and identify areas for improvement.
- To provide recommendations for improving the leadership of open distance learning institution

Research Question

What are the strengths and gaps in the leadership of open distance learning institution using 360 degree feedback?

Significance of the Study

The present study aims to contribute and add to the available literature on Leadership. This study will broaden our understanding regarding the role of leadership in the effectiveness of any institute. It will add to the existing work done on leadership in educational sector especially in ODL institutions. It will be significant for the leaders of ODL institutions to assess their leadership practices at individual level. Focusing on the findings and implementing the recommendations may increase the efficiency of the institutional processes under the guidance of the leadership.

Methodology

This is a Quantitative study in which the quantitative data is backed by few open ended questions. The nature of the study is descriptive and the unit of analysis is individual. It is a cross-sectional study. Target population for the current study is all the employees of the Department of Management Sciences, Virtual University of Pakistan.

Sampling technique used in this study is first stratified random sampling by which the employees are divided into strata (on the basis of BPS grading) and later simple random sampling is used. BPS grades have been divided into 3 segments/strata, (1-10), (11-17) and (18-22). One employee from each grade has been selected randomly making a sample of 15 respondents.

Tool used for data collection in this study is questionnaire. A questionnaire is a set of questions which may be either open or closed ended (Sekaran, 2006). The questionnaire which has been used is named CAF (Common Assessment Framework) and an extension of it has been used mostly to study the additional needs of children and young people by Department of Education, UK. The same questionnaire has been used to study the organizational effectiveness of Department of Social work in three provinces of Pakistan. Leadership has been tested by using following four elements as shown in Table-1.

Table 1: Explanation of the Elements

SR. #	ELEMENTS
1.1	Provide direction for the organization by developing its mission, vision and values
1.2	Develop and implement a system for the management of organization, performance and change
1.3	Motivate and support people in the organization and act as a role model
1.4	Manage the relations with politicians and other stakeholders in order to ensure shared responsibility

Note: For explanation of elements, refer to Table-1.

Each element requires the respondent to rate it anything out of 0-100 depending upon the level at which the element is being observed by the participant. Table-2 shows the details of scoring.

Table 2: Explanation of the Scores

EXPLANATION OF THE SCORES		
Score		
0-10	No results are measured and/or no information is available.	
11-30	Results are measured and show negative trends and/or results do not meet relevant targets.	
31-50	Results show flat trends and/or some relevant targets are met.	
51-70	Results show improving trends and/or most of the relevant targets are met.	
71-90	Results show substantial progress and/or all the relevant targets are met.	
91-100	Excellent and sustained results are achieved. All the relevant targets are met. Positive comparison with relevant organizations for all the key results are made.	
		Proposed score:

A total score has then been given by the respondent in the *Proposed score* section for each element. The results are measured by applying mean analysis using SPSS 20 on score given by respondents of each grade strata for each element.

Data Analysis and Discussion

Responses were collected from respondents of BPS (1-10) on each element. This bracket of grades includes guard, office boy, lab attendant, librarian, junior/senior clerk, etc. Table-3 shows responses from grades 1-10.

Table 3: Rating of Employees of Grade (01-10)

Respondent	Elements			
	1.1	1.2	1.3	1.4
R1	00	10	50	10
R2	00	15	50	10
R3	00	10	50	10
R4	05	10	50	10
R5	00	10	40	00
Mean	01	11	48	08

BPS (1-10)

The result of element 1.1 (refer to Table-1) came out to be **1** which shows that they are not active in this field and no information is available to the staff of BPS grade 1-10 about the mission, vision of the organization and they are not provided with any direction.

The result of element 1.2 came out to be **11** which is interpreted as no relevance with the set targets. Plans may be in the pipeline to work on this area.

The result of element 1.3 came out to be **48** which is an indication of flat trends and some of the relevant targets in this area are being met. There is a check and review in this area whether the right things are done in the right way.

The result of element 1.4 came out to be **08** which interprets that they are not active in this field and no information is available to the staff of BPS grade 1-10.

BPS (11-17) includes lab supervisor, stenographer, technician/electrician, assistant network administrator, admin officer, instructor etc. (Table-4) shows responses from grades 11-17.

Table 4: Rating of Employees of Grade (11-17)

Respondent	Elements			
	1.1	1.2	1.3	1.4
R1	09	70	40	48
R2	10	70	40	46
R3	85	35	55	50
R4	50	50	50	50
R5	70	55	60	80
Mean	48.8	56	49	54.8

BPS (11-17)

The result of element 1.1 came out to be **48.8** which is an indication of flat trends and some of the relevant targets are being met.

The result of element 1.2 came out to be **56** which is an indication of improving trends and most of the targets are being met.

The result of element 1.3 came out to be **49** which show flat trends and some relevant targets are being met. This is also an indication that work is being done on implementation of plans.

The result of element 1.4 came out to be **54.8** which is an indication of improving trends and most of the relevant targets are being met.

BPS (18-22)

This is the senior grade bracket which includes network administrator, web master, assistant registrar, lecturer, assistant, professor, associate professor and professor and the directorate. (Table-5) shows results from this grade bracket of 18-22.

Table 5: Rating of Employees of Grade (18-22)

Respondent	Elements			
	1.1	1.2	1.3	1.4
R1	75	85	75	70
R2	75	90	50	50
R3	80	75	85	05
R4	50	70	50	50
R5	75	75	60	50
Mean	71	79	64	45

The result of element 1.1 came out to be **71** which shows that substantial progress is being done and all the relevant targets are being met. Actions are being taken for adjustment if necessary.

The result of element 1.2 came out to be **79** which shows that substantial progress is being done in this area.

The result of element 1.3 came out to be **64** which is an indication of improving trends and meeting most of the targets. There is a check and review whether the right things are done in the right way.

The result of element 1.4 came out to be **45** which show flat trends and meeting some relevant targets.

Discussion

The questionnaires were filled by the respondents and each element was measured against a digit. In order to back up this quantitative data, some qualitative information was also received to judge if the quantitative data provided is authentic or not. Some of the justifications given below are on the basis of that quantitative data.

BPS (1-10)

The result of element 1.1 is **1** which shows that this segment of the staff has no knowledge about the mission and vision of institution. The leadership does not provide them with the direction in which the institution is heading. The qualitative part of the questionnaire also shows that employees have no information regarding the mission and vision of the institution thus proving that the leadership does not share this information with this segment of employees.

The result of element 1.2 shows that employees do not have much knowledge about how their performance is being measured. It can also be determined that no work is being done in this area of measuring employee performance. The qualitative data backs up this part as responses obtained show that employees do not know how their performance is being judged, they are rarely appraised verbally which proves that their performance is not being measured at the level it should be.

The result of element 1.3 shows that motivation of this segment is average. Leadership seems indifferent in terms of motivating the employees i.e. there is a little effort being carried out in order to motivate the employees. Qualitative data of the employees also show their meager satisfaction with the leadership as few responses generated show that they are not given any benefits, salary does not match the market rate. At the same time, what causes motivation is that grant of leave on genuine reasons and *eid* (a ritual money given on festival) from the higher staff, but that too, is not official.

The result of element 1.4 shows that employees do not have much knowledge about the leadership's relations with politicians and stakeholders. Minor data in qualitative form shows that politicians and other stakeholders been observed visiting the institution but no further detail is available.

BPS (11-17)

The result of element 1.1 is improving as compared to that of the previous segment. Employees in this segment have knowledge about the mission and vision of the organization but they do not claim any involvement in setting the goals for the organization. Qualitative data and proofs suggest that employees know the mission and vision statement through the website of the institution.

The result of element 1.2 shows that employees have a good idea about how their performance is being measured. All responses generated through qualitative data show that employees have a clear knowledge about Annual Confidential Report through which they are appraised. Some responses suggest that contract renewal is also based on this ACR.

The result of element 1.3 shows that motivation of this segment is satisfactory. Leadership does not take interest in motivating the employees. Not enough training is being provided to the staff. Funds are also limited which hinders implementation of new ideas by the staff (Brining new soft wares or investing in modern devices, etc.)

The result of element 1.4 shows that good relations are being maintained with the stakeholders. Academicians visit the institution more often and are also seen on institutional events. In this way, better relations are being maintained with the stakeholders that may benefit the organization.

BPS (18-22)

The result of element 1.1 shows that all the respondents know enough about the mission and vision of the institution. They also know where the institution is heading, what improvements are being brought about for the students and faculty. Proofs and examples obtained through qualitative data shows that all employees in this segment have a clear idea about vision, mission and direction of the institution. The source of this information includes prospectus, website and discussion with the leaders who communicate this information and let the employees play their part in planning.

The result of element 1.2 shows that employees in this segment are well aware of the performance appraisal system of the institution. Examples and proofs show that performance is being measured using ACRs and Student Evaluation forms which are compared to the developed Standard Operating Procedures.

The result of element 1.3 shows that employees of this segment are motivated. Leadership does show concern towards training these employees but no proper training need assessment is carried out. They are provided with study leaves but it is a time taking process. Participation in workshops is encouraged for this segment. Their ideas are invited towards most of the decisions that involve going a step ahead for the betterment of the students or the faculty.

The result of element 1.4 shows that leadership is taking required interest in maintaining good relations with politicians and stakeholders in order to benefit the institution and students. Many alumni hold good positions in different national, international, government and private organizations but are not contacted to provide internships to students, and also, no efforts are exerted towards campus hiring through alumni.

Conclusion and Recommendations

Keeping in view all the data gathered and interpreted, it is concluded that leadership of ODL institutions has done well in few areas whereas few areas still need intense attention.

Conclusion

Sharing of mission, vision and goals remain limited to segment (18-22), which mainly includes the faculty and directorate. In grades lower than 17, lack of knowledge in this area has been found, which leads to conclude that this information is not being shared with them.

Results regarding performance appraisal also show a mixed approach of leadership. Grades (1-10) do not have enough knowledge about performance appraisal which shows that no work is being done in this area for this particular segment. While grades 11 and above have sufficient knowledge about performance appraisal.

Leadership has been partially successful in motivating the employees in all three segments of BPS (1-22). Appraising employees verbally has played its part. Moreover, study leaves are also major factors that contribute to motivating the employees.

Maintaining political relations again show a mixed trend. Results for grades (1-10) are low where as it increases in the next segment. It can also be a reason that lower level staff does not have an inside knowledge about how well the leadership is trying to maintain their relations with the stakeholders.

Recommendations

Overall, leadership needs to work hard on few important areas in order to be more effective. Few decisions on part of leadership will be beneficial in order to motivate the employees and make leadership of ODL institutions more effective to achieve the set goals efficiently. Following are few recommendations that need to be worked upon:

- Employee involvement at all levels should be taken into account while developing mission and targets.
- A performance appraisal system should be introduced at all levels and implemented in true letter and spirit with clear performance indicators. This will also help employees work hard when they know their performance is being watched and will be awarded accordingly.
- Employees should be facilitated regarding study leaves and scholarships in order to enhance the human capital of the institution.
- Communication gap between leadership and employees should be reduced.
- Dissemination of information regarding mission and vision to all the levels is necessary so that all the employees know the purpose of the institution.
- Having a geographically widespread alumni, who hold good positions in different national, international, government and private organizations, should be contacted for job placement and internships of students.

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TOWARDS INCLUSIVENESS OF LEARNERS WITH VISUALLY IMPAIRED IN ODL: A PERSONAL EXPERIENCE IN OUM

Dr. Wong Huey Siew

Introduction

Today, higher education is no longer just depending on conventional education system. In fact, there is a tremendously growth in online education institution including in Malaysia. In this connection, open and distance learning (ODL) is an alternative for people to pursue their studies to obtain their degree. It seems to be accepted globally and allows widely access to the masses anytime and anywhere even inclusive of people with visually impaired. As such, ODL has the potential to facilitate the inclusion of students with visually impairments for their higher education opportunity. Therefore, online learning can be considered as an effective tool to empower people with visually impaired in the country.

According to Huey Siew and Normah Liza Aman (2012) ODL offers a great opportunity to persons with disabilities or learner with disability to pursue their studies in a university. This form of study is widely adopted in many countries within the rehabilitation context to enable disabled people to improve their academic qualifications and social integration within a community. According to them, there are several universities within Malaysia that provide ODL opportunities to its citizens including people with disabilities. Prominent among these universities is the Open University Malaysia (OUM) and Wawasan Open University.

In Malaysia, the education opportunity for learners with visually impaired to pursue their studies in higher education through ODL is available and being recognized particularly in OUM. However, there is one fundamental question arise here is how inclusive and accessible of ODL for learners with visually impaired? According to Xiu, Kim Wai; Michael and May Seung (2012), Although computer assisted learning is becoming increasingly popular, people with visual impairment face greater difficulty in accessing computer-assisted learning facilities. This is primarily because most of the current computer assisted learning facilities are not visually impaired friendly.

In order to enable learners with visually impaired to study smoothly via ODL system, it is important to fully understand how the information and its contents are designed and delivered through online learning system. it is importance to find the answer for the question of how ODL could becomes more inclusive. Perhaps, this concerns issue has been widely acknowledged in many countries. Therefore, this paper will address the issue of inclusiveness for learners with visually impaired in ODL particularly related to accessibility aspect. the discussion is based on the experiences of the author. In other words, I will share my personal experiences which I had gone through for two and half years at OUM via ODL. . Although the paper describes a personal experiences within OUM, the issues addressed and the recommendation will have wider applicability and towards more inclusive studying environment for learners with visually impaired in future.

Problem Statement

Distance learning or ODL is an excellent method of reaching the adult learner and people with disabilities (PWD). Because of the competing priorities of work, home, and school, adult learners desire a high degree of flexibility. As such, the structure of distance learning or online studies gives adults the greatest possible control over the time, place and pace of education (Jill M. Galusha, 2000).

Meanwhile, e-learning has the potential to facilitate the inclusion of students with visual impairments in classrooms of higher learning. In traditional classes, for example, students can access class notes and handouts on course web sites without assistance, assuming the course web sites are designed to be accessible and the students have access to needed information and computer communication technologies, including adaptive software for screen reading and magnification particularly for learners with visually impaired.

Today, online learning had encouraged the inclusion of students with various disabilities to further their knowledge (Di Lorio, Feliziani, Mirri, Salomoni and Vitali 2006). Even though these online learning or e-learning opportunities had greatly benefit learners with disabilities with learning amenities, there are still many barriers that hinder with their usage (Fichten, Asuncion, Barile, Fossey and De Simone, 2001). These barriers could be from the attitude of the learners, or those of architectural ones such as the favorable classrooms for disable people to study are not in-place. For example, many public building such as library, schools, classroom, restroom access, and entry to building were not well equip for learner with disabilities.

In this connection, there is one significant question that we should investigate whether the online studies is disabled friendly and inclusive enough for learners with visually impairment? Probably, standard e-learning approaches for visually impaired learners are lacking in this particular perspective. Since the literature studies related to ODL or online studies are majority concentrating on the non-disabled learners therefore, it is a need to explore this matter such as how inclusive of ODL for learners with visually impaired particular in the context of OUM.

Aims and Objectives

In order to become more inclusive and disabled friendly for learners with visually impaired in ODL, the aims and objectives of this paper is to share some personal experience who has been gone through ODL system at OUM. Beside that, this paper also intends to provide recommendation for the ODL provider to enhance the accessibility in ODL for learners with visually impaired. With regards to this, interventions efforts could be taken to improve the functional and academic outcomes of BVI learners in ODL.

Contribution

It is important for all higher education providers to recognize the needs of people with disabilities. This conceptual paper will provide some insights to Ministry of Higher Education and ODL service provider on how higher learning institution particularly in the virtual environment can become more inclusive and assessable to learners with visually impaired. Besides that, it is hope that the inputs as highlighted in the paper would assist ODL service providers to take necessary action for improving their support services to special needs learners in future. Therefore, sooner or later, they could help to achieve the wider goal of inclusive education across all educational sectors and settings via ODL especially in Malaysia.

Basic Concept

1. Visually impaired/blind

According to Huey Siew (2012), blind person can be divided into two major groups. They are blind and low vision. Basically, a blind or visually impaired person is refer to those who cannot see or almost completely lost their vision. However, low vision is referring to those who still have limited vision. According to Waldemar Klinkosz, Andrzej Sekowski, Michael Brambring (2006) the legal definition of blindness is visual acuity of less than 20 or 0/70. On the other hand, the legal definition of low vision is visual acuity of less than 20/70. This means that the low vision person has between 5% and 20% of normal vision or a field of view limited to 20 degrees.

Anastasiow Kirk and Gallagher (2000: 413) discuss the terms of vision or blind from the perspective of special education. They argue that the visually impaired can be classified into three main categories:

- (a) Moderate vision
 - Moderate vision problems can be corrected with a particular vision device.
- (b) Vision that makes it difficult (Severe)
 - They can still use assistive devices to assist them in learning. Sometimes they also equated with low vision or blindness.
- (c) Severe vision (Profound)
 - They cannot use visual tools to help their vision. So, they will use their sense of touch and hearing in learning.

2. Open and distance learning

Open distance learning refers to education and training in which using the learning resources, rather than attending classroom sessions, is the central feature of the learning experience as defined by Commonwealth of Learning (COL, 2003)

Meanwhile, Sherry, L. (1996) stated that the terms "distance education" or "distance learning" or "online learning" have been applied interchangeably by many different researchers to a great variety of programs, providers, audiences, and media. Its hallmarks are the separation of teacher and learner in space and/or time (Perraton, 1988), the volitional control of learning by the student rather than the distant instructor (Jonassen, 1992), and noncontiguous communication between student and teacher, mediated by print or some form of technology (Keegan, 1986; Garrison and Shale, 1987).

In addition, Sherry, L. (1996) stressed that each region has developed its own form of distance education in accordance with local resources, target audience, and philosophy of the organizations which provide the instruction. Many institutions, both public and private, offer university courses for self-motivated individuals through independent study programs. Students work on their own, with supplied course materials, print-based media and postal communication, some form of teleconferencing and/or electronic networking, and learner support from tutors and mentors via telephone or E-mail.

3. Inclusive education

Inclusive education is about how we develop and design our schools, classrooms, programs and activities so that all students could learn and participate together. *Cited from (www.gnb.ca/0000/.../definition%20of%20inclusion.pdf)*. This means that Inclusive education happens when children with and without disabilities participate and learn together in the same classes.

Discussion

It was commonly accepted that in the ancient time, only the strongest persons were educated first, therefore the traditional image of students in higher learning were limited in many countries, but due to the impact of internet, and more technology become available in many parts of the globe this conventional attitude has changed to online communities. This scenario has created new type of student's population. Though culture had changed, education for the disable people changed slowly, even when it did help with breaking down some barriers but not all. (Almazan and Quirk, 2002). Internet had changed the way we work and learn.

According to Huey Siew (2012), nowadays, distance education is seen as an alternative to everyone to acquire their knowledge and skills. Distance learning considered as a flexible and appropriately inclusive to deliver inclusive education to all including for learners with disabilities (LWD). In addition, online courses had enhanced the learning opportunities for people that experience barriers to attend classroom base courses which could be due to health, climate, transportation, physical accessibility or even disabilities factors (Debenham, 2002). Furthermore, students who had print impairments which now can access course materials, notes and handouts on the website without much assistance, as long as those are designed to be accessible (huey Siew and Normah Liza Aman, 2012).

Meanwhile, most people working within the higher education sector understand the importance of making e-learning accessible to students with disabilities, yet it is not always clear exactly how this should be accomplished. Then, E-Learning and Disability in Higher Education considers the roles and perspectives of the key stake-holders involved in e-learning: lecturers, professors, instructional designers, learning technologists, student support services, staff developers, and senior managers and administrators (Jane seale and Routledge; 2013).

In the context of ODL, I am glad that I was one of the OUM graduates in 2014. I had enrolled as OUM post graduate learners since 2011. I choose to study in OUM because of its conveniences and reasonable disabled friendly online system. Although I did face some difficulty and challenges, I am confident enough that I would be able to complete my courses in OUM via ODL. The online studies approach really helps me a lot in facilitating my studies in OUM. , likely or unlikely, I had accomplished my dreams to obtain my master degree in human resource management.

Based on my personal experience that I had gone through in OUM, I would like to describe ODL journey in OUM was wonderful. in overall, I found that ODL is a good alternative for learners with visually impaired to pursue their tertiary education. It was so convenience, accommodative, flexi and the most significant ones was enabled me manage my studies well and effectively.

In order to get the entire picture of how learners with visually impaired could fit- in within the ODL system, I wish to share with you on some aspects of online studies or virtual learning experience in OUM. As such, I would like to highlights the following aspect to illustrate how learners with visually impaired could survive within ODL environment. My personal experience would be described as below:

1. **Online application experience**

Generally, I found that ODL particularly in the context of OUM is good. In terms of application and admission, I could do it through online application. The system is quite user friendly because we could do it at home and at any time. Of course, some time, we have to get a little helps from our friends or anybody else. That was my initial engagement with ODL system in OUM. Perhaps, it really convenience and made my life much more easy. At least, I could do it without required to have many sighted friends to assist me to fill up various printed forms as needed in the conventional model. At least, there is some inclusiveness elements in the online system.

It is important to note that online application and registration is crucial for visually impaired learners due to their vision restriction in reading the printed document such as the printed form that need to be completed. In this case, online application could easily overcome my constrains. In addition, I could check my application status any time through online system. However, the electronic form used need to be ensure fully accessible in according to 3WC requirement standard. They should not upload the scan image document because the Jaws application is not able to read the image document. This measure is crucial because the visually impaired could filled up the electronic form without required sighted friends assistance and the university also could be recognized as disabled friendly university or service provider. Eventually, it could become one of the inclusive ODL providers.

2. **My profile**

My profile is one of the most importance system that help visually impaired learners to update and get their needed academics information such as class schedule, dates and the venue of the classes, current semester results, transcript, financial matters status etc. in fact, I would considered this is the most convenience and easy ways for visually impaired learners to access such important information. At least, visually impaired learners could obtained that information on their own via my profile provided there must have the computer with Jaws application facility. This have been change the conventional methods for visually impaired learners to get information by seeking someone to read and check on the notice board for where and when the class schedule is. In addition, they do not required to be in campus to find out their time tables and they could get such information easily through online system by themselves.

3. **My virtual learning environment (MYVLE)**

As one of the OUM learners, I am proud to say that MYVLE is a very useful, resourceful and practical portal for learners with visually impaired. This portal would enable me to manage my studies easily and effectively. I emphasized this because MYVLE is reasonable inclusive for special needs learners like me to support my studies within ODL system. For instance, I could just on my computer with the internet connection to download my assignment question, modules, check current announcement and the most important is the forum online. Through forum online, I could interact with my e-facilitator and my course-mates any time and any way. By optimized the forum online platform, I could ask question and seek advice from my e-facilitator as well as my fellow course-mates.

Besides that, I also could download my assignment question and interestingly was I immediately could read on my own with the support of Jaws application. Now, I do not depend so much on others person to read the entire printed question as in the conventional model. This is what I meant the online system is reasonable disabled friendly. At least, my studies life is getting easier and less stressful in seeking someone to read the printed materials for me at all times. Then, as a ODL learners, we could obtained and share our notes from one to another. Perhaps, we may upload or download the notes as attached by our e-facilitator or course-mates. This is the beauty of online studies.

There have one significant features that I must pointed out is through MYVLE and forum online platform, I could download my HTML module. In fact, this facilities is even more crucial to learners with visually impaired. The reason is the visually impaired could read the module immediately as I described before. However, it is not all the module made available in the HTML file. Therefore, I still have to used the conventional method but with a little bit more advance. Whereas, I have to scan the respective textbook and convert the scan file into a Microsoft words document. With that, I am able to read the textbook through my computer. As such, I am strongly recommended that the module should made available in HTML or at least in the PDF document.

4. My library

It is proud to say that OUM do have a digital library which it is so useful and convenience to adult learners. The library facilities are variety and meeting the needs of ODL learners. From the perspective of visually impaired learners, I would glad to say that digital library enabled me to search and obtain various needed reading materials and references. Instead of reading the printed textbook, I also could brows and look for the e-book as well as e-journal via several online database.

In order to complete a master degree, we have to take and complete more than 10 courses so that, it certainly required learners to seek for various reading materials especially when doing the assignment and the final project. Therefore, digital library is considered as friendly and convenience for me to obtain relevant reading materials. With the digital library facilities, I could a bit easier to complete my academic tasks. However, there have some challenges in accessing the digital library because it quite often fails to load in due to the internet connection and the restriction of the access to the particular selected document. So, it always ends up with certain degree of frustration and disappointment.

In overall, OUM digital library does help and always support my studies particularly for visually impaired learners. Perhaps, I can easily to get the past years examination question as my references. Past years exam question is very important as our guide and reference in analyzing the pattern of the exam question. With this regards, again I could reduce my dependency on others to search, print and read the question one by one to me. Now, I could do it on myself.

According to Jane seale and Routledge (2013),

On the other hand, I would like to highlight on some issue and challenges faced by visually impaired learners when engaging in the ODL studies environment. Probably, it can be summarized into the following themes:

1. Difficulty to complete the online forms

Visually impaired learners always faced Difficulty to fill up the forms as posted in the e-services. As required in certain form, there is a question to click the option but the keyboard user unable to click. Therefore, when the selection controls for multiple option lacking of a consistent keyboard navigation procedure so that, it causing difficulty to complete the online submission. In order to overcome such challenges, visually impaired learners have to seek help from their sighted peers to accomplish the incomplete task. to overcome this obstacle, option can be given in the dialogue box and visually impaired just required to tab yes or now and then, enter.

2. **Scan image document**

When the circular and the announcement uploaded in the scan image format file then, it definitely causing some difficulty for visually impaired learners to access particularly when reading the file. If not, it just appear as a blank file because the Jaws application is not able to recognize the scan image file or the file with various graphics or flesh. To overcome this challenge, it is more appropriate to provide text or words file option rather than just scan image file.

3. **Inaccessible e-document**

As described before, visually impaired learners did face certain degree in reading the document which incorporated with various graphics or flesh features. It is more appropriate to provide text or pdf (not in scan image) document to them. Therefore, visually impaired learners could easily read the respective document on their own.

Recommendation

As highlighted some issue and challenges as discussed above, author would like to recommend the following:

1. **Provide technical support**

Technical support would be essential and helpful in allowing visually impaired learners to gain the skills required for online navigation, as well as accessing the university's website. It will be more appropriate if the technical support made available at the learners support centre or library. Therefore, visually impaired learners could have inclusive learning environment in ODL. The technical support here is referring to how to effectively guide the learners with visually impaired to fully utilize the digital library, Myvle and my profile facilities. Of course, the technical support should be included the arrangement especially during the examination times.

2. **Adopt World Wide Web Consortium (W3C) for web accessibility**

When we talk about inclusiveness of an educational system including online studies, it is highly recommended to adopt w3C approach. W3C is a body responsible for the coordination of developments to Web standards. W3C seeks to develop standards, which can provide universal access to digital resources. From the outset W3C has sought to ensure that this mission embraced the needs of people with disabilities. Besides that, W3C could help to promote a high degree of accessibility for people with disabilities particularly for learners with visually impaired. With this adoption, learners with visually impaired will have much better and disabled friendly in accessing web-resources. Therefore, ODL would be more inclusive and becomes the choice of visually impaired for tertiary education in the near future. Therefore, if this w3c adopted, there should be no issue or less restrictive issue for learners with visually impaired to take part through online studies.

3. **Provide Disabilities Training for staffs**

In order to provide a conducive learning environment for learners with visually impaired, it is important to well equip the staffs either at the learning centre or at HQ with necessary knowledge and information related to disabilities issue particularly when dealing and interacting with them. Therefore, the staffs sure could provide the best and satisfactory service to all learners including learners with special needs.

4. Supports services

It is highly appreciate if the concerns ODL service provider could made required support services available to this particular special need population. The support services includes individualize guide on how to fully utilize the digital library services and MYVLE. With such services, OUM could become one of the top inclusive and disabled friendly universities in the country as well as in the region.

5. Provide e-module

E-module can be made available to learners with visually impaired. It is more practical if the module can be provided in the PDF form. In fact, they could choose the module either in the cd form or printed form. With this flexi arrangement, they can immediately use the reading materials on their own as their references.

6. Upload accessible document

It is important to note that the documents uploaded in the university website or MYVLE must be in accessible format. The accessible format includes words format or PDF. For instance, the assignment question uploaded is the accessible format because the Jaws application used by the visually impaired can read that document well. However, if the scan image document without convert it into words format definitely is not accessible. Therefore, we should fully aware of the accessibility issue.

Limitation

This study had certain limitations. Since the subject we studied consisted of only one student, therefore it is advisable and be careful not to generalize the reported outcomes to all. In fact, the scope of the discussion also just limited to one specific higher learning institution. So, the scope of the study could be extended to others higher learning institution particularly related to OdL.

Conclusion

As we all known that ODL systems for learners with visually impaired are available but it does not hundred percent perfect so that, an innovative and more efforts are needed. It is a fact that the advances in information technology could enhance an opportunity for these particular special needs learners to pursue their tertiary education. In fact, the ODL system could become more inclusive if the service provider just add on or accommodate certain feature in the existing system. With regards to such consideration, ODL would be more interactive, user-friendly and inclusive. As such, online study will enable visually impaired learners to participate actively and enjoy their studies. Therefore, inclusive approach is essential even within ODL. Finally, it is important to note that towards inclusiveness of ODL doesn't required much extra costs but just accommodate certain features and text option only.

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BLENDED LEARNING FOR BUILDING STUDENT-TEACHERS' CAPACITY TO LEARN AND TEACH SCIENCE-RELATED INTERDISCIPLINARY SUBJECTS: THE CASE OF HONG KONG

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Abstract

This paper is to introduce an inter-university collaborative project entitled “Blended Learning for Building Student-Teachers’ Capacity to Learn and Teach Science-related Interdisciplinary Subjects”. The project is a response of the science education faculty of three Hong Kong tertiary institutes to the challenge of catering for diversity of academic backgrounds among student-teachers. These student-teachers enter their institute with highly varied science backgrounds yet they have to attain comparable levels of competence in teaching science or science-related interdisciplinary subjects when they graduate. This entails students with a weak science background to build their science foundational knowledge before or during their major science courses to enable them to fully benefit from those courses. The project helps these students to meet this challenge by developing learning materials to assist them in developing foundational science knowledge through self-directed learning blended with their major courses. Four sets of e-learning modules are to be produced covering four content domains: Nature of Science and Scientific Inquiry, Energy and Physical Phenomena, Materials in the Environment, and Life and Health Sciences. These modules are designed based on the 5-E learning model (Engagement, Exploration, Explanation, Elaboration, and Evaluation). These learning materials will be delivered to students using the Learning Management System (LMS) system provided by Moodle. These modules will be subject to three rounds of trials through an iterative process of design, implementation, evaluation and re-design. The effectiveness of the e-learning materials in facilitating blended learning is evaluated through student surveys and focus group interviews with students and course lecturers, and further reviewed by expert consultants. The evaluation findings up to date indicate positive outcomes as well as challenges in relation to instructional design and those imposed by border crossing from their past learning experiences to the culture of science. Apart from catering for diversity in learners’ understanding of science, this project contributes to the development of science education faculties’ capacity to collaboratively design and implement innovative designs for blended learning to address learning issues in science teacher education in a specific locality.

Background of the Project

The project addresses the problems that science teacher education providers have been facing in Hong Kong. At the primary level, science is not taught as an independent subject. It is integrated with social studies and health education to form an inter-disciplinary subject - General Studies. The implication for teacher education is that General Studies teachers may have varied backgrounds in science. At present, many teachers are drawn from the non-science stream. These teachers lack the essential science background for teaching science concepts and process skills. The problem of differential competence of primary teachers in science is likely to be exacerbated with the implementation of the new senior secondary curriculum in Hong Kong a few years ago, which provides students with even greater flexibility in their choice of subjects. Students may or may not opt for any one single science subject, namely, Physics, Chemistry or Biology, making the background of prospective student-teachers in science even more diverse than ever.

Science teacher education for the secondary level may also experience problems for two reasons. First, science teachers, regardless of the pure science disciplines they majored in the university, have to teach Junior Secondary Science for students aged 12-15 that integrates Physics, Chemistry and Biology. Second, a new senior secondary subject, Liberal Studies (LS), has been implemented in Hong Kong just a few years ago, which focuses on developing secondary students’ critical thinking skills through an issue-based approach applied to various contexts including public health, energy and

environment. This implies that Liberal Studies teachers need to have a basic mastery of science concepts and scientific reasoning, which many non-science teachers are likely to lack.

Inadequacy of Current Provisions to Address the Learning Issue

Programme evaluations by both students and tutors in the Hong Kong Institute of Education have consistently indicated that the courses on science for student teachers are pitched at too high a level for those who have little background knowledge in science. These student-teachers have difficulty in understanding more advanced science concepts taught in science-related courses. This inevitably influences their confidence to teach science-related topics. Research on science teachers' performance in teaching secondary science subjects outside their specialisation indicates that such teachers generally have less confidence than when they are teaching their specialist subjects (e.g., Dillon, Osborne, Fairbrother, and Kurina, 2000), possess more misconceptions about subjects outside their specialisations (e.g., Kind and Kind (2010) and are less capable of handling students' conceptual problems (e.g., K  p  ly  , Heikkinen, and Asunta, 2009). The inadequacy of scientific knowledge, particularly among primary and junior secondary teachers, has been a cause for concern in both Hong Kong and the United States (So, Cheng, & Tsang 1998; NRC, 2007). Research has demonstrated that teachers' intentions to teach science through inquiry, an approach highly recommended for teaching science, and their self-efficacy (Liang and Richardson, 2009) are determined at least partially by their perceived level of mastery over content knowledge (Luera et al., 2005). Moreover, teachers' previous learning experience in science, their perceptions of the nature of science and inquiry and their understanding of the process of learning science by inquiry all affect their ability to teach science through inquiry (Avraamidou, 2012; Liang and Richardson, 2009; Varma et al., 2009; NRC, 2007).

Existing practices in the Institute to address student diversity often involve the inclusion of supplementary science contents pitched at a more foundational level. However, this has not solved the problem because of insufficient contact time and the great diversity of students' understanding of science. Some have difficulty in catching up while others with stronger backgrounds in science find the contents not challenging enough, hence becoming demotivated. Some lecturers have resorted to face-to-face coaching and tutorials for students in need on an ad hoc basis, but these measures were usually not well structured and organised to create a significant impact on students' learning. These problems are more acute for postgraduate student teachers whose programmes are often too short to focus on subject content knowledge in addition to pedagogy. These problems are acute for part-time in-service postgraduate student teachers who could spend only limited time on campus.

Paradigm Shifts in Learning

Blended learning approaches have become increasingly common in tertiary education around the world. These approaches often involve the use of a learning management system (LMS) to supplement face-to-face teaching. The learning management tools include blogs, quizzes, journals, online discussions, virtual lectures and activities, e-portfolios and feedback. The advantages of blended learning are increasingly being recognised, including the provision of new learning environments, more opportunities for learning, less dependence on teachers, the facilitation of cooperation among students, and recognition and reinforcement of students' efforts (Gil and Garcia, 2011). In short, it "allows a student to take advantage of much of the flexibility and convenience of an online course while retaining the benefits of the face to face classroom experience" (Dziuban, Hartman, Cavanagh, and Moskal, 2011, p. 17). Moreover, the blending of e-learning and face-to-face delivery modes is highly flexible and can be tailored to the specific needs of different learning or subject contexts. For science learning, different strategies can be embedded in blended learning, including virtual lectures (Gosper, Green, McNeill, Phillips, Preston, and Woo, 2008), virtual lectures followed by group-based problem-solving activities in the classroom (flipped classroom), interactive simulations (e.g., University of Colorado Boulder, 2013) and technology-assisted investigation activities such as a remote-controlled laboratory (RCL) (Gr  ber, Vetter, Eckett, and Jodl, 2007). Thus,

blended learning constitutes a paradigm shift toward more diversified goal-oriented and personalised pedagogies.

A two-year project (2014-2016) was conceived against this background. The main thrust of the project is to design a series of basic science modules to provide student-teachers with the necessary foundation for acquiring more advanced content knowledge from their major courses. These modules are designed for integration into existing courses in a flexible way to meet different course requirements. The pedagogical design of these modules is based on a blended learning mode that combines the advantages of e-learning and face-to-face contact. The e-learning component is delivered through Moodle, a Learning Management System (LMS). This learning environment allows for self-pacing by students under the guidance of the course tutor. Students can learn at different pace depending on their own previous knowledge. This project, the first of its kind, involves the collaboration of the science education faculty of three institutions in Hong Kong, including Hong Kong Institute of Education (HKIEd), Hong Kong University and the Chinese University of Hong Kong, in designing, piloting and evaluating the modules to address their common concerns. It is hoped that this joint venture could contribute to the building of the capacity of local science education faculties to design and implement creative and innovative teaching and learning strategies to address curriculum and learning issues in teacher education.

Objectives of the Project

The project is guided by the following objectives:-

1. Develop new foundation science modules that improve student teachers' basic scientific knowledge as a foundation for building further content knowledge and pedagogical content knowledge in teacher training programmes.
2. Build student teachers' capacity for scientific thinking as a basis for developing critical reasoning.
3. Create a learning environment that fosters self-paced learning among student teachers to help them adapt to the change in the quality of learning demanded by learners who are migrating from the secondary to the tertiary level of study, and from the role of learner to that of teacher.
4. Provide role models for student teachers on the use of interactive e-learning strategies blended with classroom teaching to extend the pedagogical repertoire of student teachers who will be teaching science-related subjects.
5. Build the capacity of teacher education faculties to develop an innovative curriculum and pedagogy to address common concerns in teacher education.

To realise these objectives, this project comprises four progressive stages of development. The first stage is the design of learning modules that can be integrated with existing teacher education courses to enhance student teachers' understanding of basic science. Such understanding constitutes the basis for their mastery of science-related content and pedagogical knowledge and skills. The second stage is the piloting of these modules in relevant courses. The third stage is the evaluation of the trials. The final stage is the revision of the module design for more effective learning and integration with existing courses. However, in actual implementation, these four stages are combined with each other to varying extents.

Stages of Module Development

Stage 1: Design of Learning Modules in Basic Science

(a) ***Structure and Organisation of the Learning Modules***

The design of the foundation science modules forms the basis of this teaching and learning development project. The proposed science learning modules will cover major areas or topics of science that are fundamental to teacher education courses across the three institutions. A detailed examination of the existing courses suggests that the proposed foundation science modules can best be organised into four content domains – “Nature of science and scientific inquiry”, “Life and health sciences”, “Energy and physical phenomena”, and “Materials in the environment”. The organisation scheme of these domains with their constituent modules and topics is provided in Appendix A. Each domain comprises a number of modules arranged at three levels of complexity – basic, intermediate and advanced. Each module comes with a set of intended learning outcomes to facilitate the assessment of students’ achievements. The “Nature of science and scientific inquiry” domain provides the foundation for the study of science-related methods courses such as *Teaching of Critical Thinking in General Studies*, *Liberal Studies and Methods of Inquiry* and *Science and Technology in Society* while also contributing to all science-related courses. The “Life and health sciences” domain is the foundation for the *Natural World and Healthy Living*, *Biochemistry of Health and Disease*, and *Teaching of Junior Secondary Science* courses. The “Energy and physical phenomena” domain supports *The Technology and Usage of Energy*, *Forces of Nature* and *Teaching of Junior Secondary Science* courses. The “Materials in the environment” domain is fundamental to *Environmental Studies*, *Introduction to Environmental Science* and *Major Methods Course: Liberal Studies*. The division of each module into different levels of complexity allows course lecturers greater flexibility in integrating appropriate topics into their courses and allows them to build students’ knowledge foundation prior to introducing more advanced and applied knowledge. To capitalise on the expertise of individual team members and to enhance collaboration among the participating institutions, the project team is divided into different working groups including the Steering Group, the LMS Development Group, and Module Development Groups for the four different domains.

(b) ***The Learning Process and Principles of Instructional Design***

The learning process that underpins module design is based on the constructivist paradigm that recognises learners’ active construction of meaning from educational and other life experiences. Student teachers without formal training in basic sciences are prone to alternative conceptions arising from their own interpretation of science-related information encountered in their daily life. Thus, the recognition of these conceptions is instrumental in scaffolding conceptual change (NRC, 2007). To align with this paradigm, the 5E instructional model developed by the Biological Science Curriculum Study (BSCS) will be adopted as the framework for the design of the learning modules (Bybee, Taylor, Gardner, Van Scotter, Powell, Westbrook, and Landes, 2006). This instructional model consists of five phases of learning. In the ***engagement*** phase, students are engaged in short activities to motivate them and elicit their prior knowledge. In the ***exploration*** phase, they are presented with activities that help to identify misconceptions and facilitate conceptual change. The ***explanation*** phase allows students to explain their understanding of the concepts and receive input from teachers to guide them toward a deeper conceptual understanding. In the ***elaboration*** phase, students are challenged to extend and apply their concepts to develop a deeper understanding through additional activities. In the final or ***evaluation*** phase, students and their teachers evaluate their own progress toward achieving the educational objectives. Research findings on science learning have consistently pointed to the instrumental role of inquiry-based approaches that encompass asking and defining questions, planning and carrying out investigations, analysing and interpreting data, and constructing explanations in developing students’ conceptual and procedural understanding (NRC, 2012).

Thus, inquiry activities will be used in the *exploration* through to the *elaboration* phases to facilitate learning, as appropriate.

(c) ***Integration and Articulation with Existing Courses***

Because of the interdisciplinary nature of most of the existing courses, it is envisaged that a single module may support one or more courses, and conversely, a single course may be supported by two or more modules/topics. An example taken from the HKIEd Bachelor of Education (Liberal Studies) programme to show the relationships between possible learning modules and three of the courses in the BEd (Liberal Studies) programme is provided in Appendix B. Students may be assigned to visit relevant topics in a foundation module and complete the activities before the course lecturer introduces them to more advanced scientific or interdisciplinary concepts in the course. Alternatively, students may visit specific topics in a module (e.g., body defence mechanisms) to understand or consolidate their understanding of basic concepts that they need to draw upon in subsequent discussions on related interdisciplinary topics (e.g., policies on vaccination in a Public Health course) or on the choice of pedagogy in teaching those concepts in methods courses. Some examples showing how these foundation modules could be integrated with the existing courses are provided in Appendix C.

(d) ***Instructional Design***

The foundation modules/topics are designed for blended learning. Students are guided through a series of learning activities in the LMS that are designed and presented at progressive levels of complexity. In studying the module/topic assigned by the course lecturer, students can choose activities according to their science background and develop concepts and skills that are new or not so familiar to them, while skipping those with which they are familiar. Students are provided with a pre-test specific to each topic to help them assess their prior understanding so that they can make informed choices regarding which topics or activities they should pursue. The differentiation of learning activities into progressive levels of complexity will allow students who have already acquired a relatively good understanding of certain topics from secondary schooling to tackle activities of a more applied or complex nature to test or consolidate their previous understanding. Students with only minimal background in the topic may start with more fundamental contents, revisit the module contents whenever necessary until they are confident in their mastery of those topics. In the end, all of the students, regardless of their background in science, are required to complete a post-assessment quiz to evaluate their achievement of the learning outcomes for the assigned modules/topics. This assessment will ascertain whether students have achieved the required standard. The course lecturer may also assess students' performance by tracking the quality of their work as recorded by the LMS. Those who are not able to meet the learning goals will be asked to revisit the topic or seek consultation with the course lecturer/tutor. Students' performance in the blended learning modules will contribute to their final grade in any course in which these modules/topics are embedded.

Although a computer-based learning environment facilitates self-paced learning, the freedom of navigation and loose sequencing may not be conducive to effective learning (Greene and Land, 2000; Jacobson and Archodidou, 2000; Jonassen, 1996) and match with the learning style of individual students. To address these potential problems, students are encouraged to reflect on their learning experiences by the use of discussion forums. Three questions are posed to students at the end of a module or a major part of a module - What have you learnt from this part/module? What do you think the module writer could have done to help you learn better? After studying this part/module, what would you like to learn more about this topic? This kind of reflection fits with the constructivist paradigm of learning whereby students are led to think meta-cognitively about what they have learnt and how they could extend their understanding based on their own conceptual frameworks. Research has shown that such meta-cognitive monitoring and control is important for the development of self-regulatory processes and is a predictor of achievement in an e-learning environment (Azevedo, Guthrie, and Seibert, 2004;

Greene and Azevedo, 2009). More importantly, e-learning on a self-directed basis will be blended with face-to-face contact with the course lecturer. Such contact serves various purposes, including introducing students to the e-learning environment and the associated e-learning tools, explaining the operations of online individual and group activities, following up on online activities, or providing consultation to student groups that need further conceptual clarification.

Moodle (2.7) will be used as the major learning platform. The major advantage of this kind of LMS is that it is familiar to students and contains a wide array of e-learning tools, such as quizzes, journals, blogs, and discussion forums.

(e) ***Management of Learning Flow Using LMS***

Based on the 5E Instructional model, the blended learning process involves the following steps, although these steps will be integrated to meet the needs of individual courses.

Step 1: Learners' self-analysis of needs based on their understanding of the topics as revealed by diagnostic tests.

Step 2: Presentation of triggers/scenarios to motivate students to investigate the underlying scientific concepts (Engagement).

Step 3: Inquiry into the topics through learner-centred individual or group activities supplemented with systematic inputs such as animated powerpoints and computer simulations and modelling (Exploration).

Step 4: Development of explanations relevant to the inquiry with the support of online and face-to-face tutorials (Explanation).

Step 5: Application of scientific concepts/skills to wider contexts to facilitate deeper learning (Elaboration).

Step 6: Self-assessment with outcomes feeding back to the student and tutor (Evaluation).

Step 7: Self-reflection to review personal learning progress (Evaluation).

Stage 2: Piloting the Foundation Science Modules

The pilot testing of the foundation science modules is conducted in three rounds. In each round of trial, each participating institution selects courses in which particular modules will be tested. The course lecturers and the project team members will discuss how these modules could best be integrated into the course to achieve the intended learning outcomes. The course lecturer will carefully monitor students' progress and performance in various assessment tasks as recorded by the LMS (e.g., quizzes) to evaluate their achievement. The second and third round of trial involve re-trial of modules that have been revised after the previous round of trial so that the module design can be improved in an iterative manner. Before each round of trial, professional development workshops will be provided to all of the course lecturers and tutors involved to familiarise them with the e-learning platform, the associated e-learning tools and the various technology-assisted tools for learning science. The course lecturers also carefully record the ways in which they use the modules in the trial.

Stage 3: Evaluation of the Trials and Module Design

Upon completion of each piloting phase, the project team will conduct rigorous evaluations of the effectiveness of the modules and the problems encountered. The evaluation will be based on data collected through surveys, interviews, case studies and LMS records of students' progress, including students' reflections, pre- and post-test outcomes, perceived effectiveness and difficulties (students), perceived usefulness of the science modules/topics in supporting the teaching of existing course contents (course lecturers/tutors) and perceived appropriateness of the design of the LMS in delivering the module content (project team members).

Stage 4: Revision of the Module Design

The evaluation outcomes are used to inform further revision to the modules to improve their effectiveness and integration with existing courses. The end-products of this stage are a set of blended learning module kits for use in future course implementation.

Evaluation of the Trial

The various approaches adopted by individual course lecturers in using the modules are summarized below:

- The module was assigned to students before teaching the course/a topic for self-directed learning.
- The module was divided into parts, each of which was integrated with different topic areas of the course as basic reading materials or contextual issues for discussion.
- The module was assigned to students to complete before a lecture. Students were asked to use the following week to go through it by themselves. A quiz was then administered to the students in the class a week after to test students' understanding of concepts covered by the module. The lecturer then summarized the main concepts expected to be learnt by the students to build a foundation for learning subsequent topics.
- The module was integrated extensively with the course contents (in the case of modules on scientific inquiry). The module in the form of a series of inquiry activities was uploaded to Moodle for students to work on in the class. Before conducting the activities, students were required to go through specially designed textual materials to learn the concepts involved in the activities if they have not learnt them before. After the students have completed the activities in groups, they were asked to upload their activity outcomes in the form of video-clips to the Web for sharing and discussion with the rest of the class under the guidance of the lecturer.

The outcomes of the trial of each module were evaluated by five different means:

- (a) A pre-test and post-test embedded in the module to assess students' learning outcomes by comparing their conceptual understanding before and after completing the module.
- (b) An online questionnaire survey with Likert-type and open-ended questions administered to students after they completed the module to gauge their feedback on the module.
- (c) Students' focus groups to collect students' views about blended learning, their perceived merits and difficulties encountered in going through the learning materials, and any revisions they would like to see in revising the modules.
- (d) Lecturers' focus groups to collect lecturers' own evaluation outcomes of the effectiveness of blended learning using the materials they provide to students.
- (e) Evaluation meetings held by project teams based on the results obtained from (a) to (d).

As space is limited in this paper to discuss in detail the evaluation outcomes collected in terms of statistical data, only a summary of the major outcomes gathered is presented in the following sections, which is deemed sufficient in reflecting the impact of the project to date.

(a) *Students' learning outcomes and feedback*

As shown by the results of the pre-test and post-test, all of the modules trialed (except for those modules where these tests were not administered due to practical reasons) showed various degrees of improvement to their conceptual understanding after completing the module. Four of the modules trialed recorded statistically significant difference in favour of the post-test as shown by the results of paired t-tests.

Students' feedback to the modules was gauged by means of an online questionnaire survey after they have completed the module. A total of 270 students participated in the survey, with 165 students having taken at least one science subject at the senior secondary level, and 105 not having taken any senior science subjects. The results show that most students were positive toward their blended learning experiences. With respect to the module contents, the participants were in general aware of the expected learning outcomes of the modules and these expected outcomes helped them to focus on the topics to be studied. They considered the contents helpful to develop their understanding of the topics, identify their misconceptions, and overcome their difficulties in learning the topics.

As for the design of instructions and activities, the respondents agreed that the instructions /guidelines were easy to follow and facilitated self-directed study; the learning activities were motivating and interesting; and the language used easy to understand. Regarding assessment, the students generally agreed that the assessment activities were useful for checking their understanding of the contents, and they received useful feedback on the assessment to enhance learning or advice through online help and face-to-face consultation. Overall, the respondents agreed that the module they participated helped them strengthen their background knowledge to prepare them for studying science-related major courses. These responses imply that the modules have served to enhance students' learning and strengthen students' science background to a considerable extent.

However, one caveat drawn from these data is noteworthy. That is, the students with at least some science background (having completed at least one New Senior Secondary science subject) reported slightly more positive responses than non-science students (those who had not taken any new secondary science subjects). However, the latter group agreed to a larger extent than the former group with regard to three important items – “The contents could develop my understanding of the topics”, “The module helped me identify my misconceptions and overcome difficulties in learning the topics”, and “The module helped me strengthen my background knowledge to prepare for studying science-related major courses”. However, there was a greater number of non-science respondents than science students citing “too difficult” in the open comment sections, although there was a comparable number of non-science students who regarded the modules as “useful” and “interesting and motivating”. This implies that although the former group have benefited from their blended learning modules, they still perceived considerable difficulties in going through the learning activities.

A total of 17 students drawn from different courses trialed had participated in 4 focus group meetings to provide more in-depth feedback on the first trial. Aside from the positive responses collected from the questionnaire, a number of issues were pointed out by the students that are of implication for future revision of the trialed modules and development of new modules. The more common ones are listed below:

- The module contents are still too difficult for non-science students.
- The contents could be made more interesting, interactive and contextual. Right now, they are a bit remote from students' daily lives.
- Students could memorize those concepts in the short term but not in the long term.
- The contents could be integrated with the course in more systematic ways.
- It was sometimes difficult to navigate on the learning platform.
- There is a lack of Chinese translation of science vocabulary. Explanation of science concepts should be provided in layman terms as far as possible.

(b) *Lecturers' feedback on the trial*

A focus group meeting was arranged with four lecturers that had participated in the first trial to gauge their feedback. Most of the lecturers participating in the trial used the modules as self-directed learning materials in addition to the regular course materials. The lecturers normally assigned a particular module or part of a module to their students either before or in the middle of the course. They thought the module materials were useful judging from the pre-/post-test comparison. However a lot depends on whether the students went through the materials seriously or merely to pass the tests or quizzes. It seems that students were better motivated when they completed quizzes in the class than when allowed to work on them in their own time. Students' participation can be guaranteed only if the module is made 'compulsory' by allocating participation marks upon satisfactory completion. It was also shown in the trial that students would participate more enthusiastically if the contents of the module were included in the end-of-term examination.

The lecturers made the following specific suggestions after completing the first trial:

- It is more useful to emphasize the objectives of a module (e.g. self-directed learning) at the start of using the module.
- It is better to provide students with a summary when they completed a module.
- A problem-based approach can be adopted in designing the modules, in which students are required to answer questions to facilitate more active learning.
- Each module could be designed in such a way that component parts can be used separately, thereby increasing the flexibility in blending the module materials with the course contents.
- Students' performance in the post-test can be counted toward the overall grade of the course, or the e-module contents can be assessed in the end-of-course examination.
- The approach used by the e-module should preferably be consistent with that employed by the course in which the e-module is used.
- Additional modules can be designed to introduce other basic concepts such as radiation, bonding structure, molecular interactions and redox reactions.
- An e-learning week can be incorporated into the course to allow time for students to complete the self-directed learning activities in relevant modules.
- In-class quizzes can be used to monitor students' progress and check their misconceptions after completion of a module.
- Students can be allowed to skip certain parts of a module if they were able to gain a certain score in the pre-test.

(c) *Comments and suggestions by the LMS Development Team*

- SCORM packages can be produced to integrate different modes of representation including texts, animations, videos and quizzes, with the added value of synchronizing the texts and animations with the sound track (of the narrative). However, there is the issue of data retrieval. Further editing is also difficult if SCORM is used.
- Making a student' progress visible to all students can help motivate students to complete the modules. It processes peer pressure on students.
- Moodle tools such as Feedback, Choice or Survey can be used to elicit students' feedback to enrich their learning experience, yet this feedback should not be counted toward students' final grades.
- A glossary containing terms that are particularly confusing to students can be added to the front page of the modules.

- Facilitation by course lecturers is desirable for better integration of the module contents into the course, which is important for a blended-learning approach.
- Space could be provided for students to personalize their learning experiences, but these spaces need to be monitored by the lecturer.
- Activities involving cell phones could be added to enhance learning outside the classroom (e.g. capturing data). Third party wares, e.g. Google Drive, Dropbox, and YouTube can be used to supplement Moodle.

Overall Summary

As judged from the evidence reported herein, we considered the outcomes as encouraging. The objectives have been achieved to a certain degree, most notably, the successful development of new foundation science modules delivered through e-learning/blended learning mode to improve students' basic science knowledge. Students were generally receptive to this kind of self-directed e-learning approach blended to varying degrees with more conventional approaches adopted in their major courses. In designing and trialling e-learning materials, we experienced the capacity building process most needed to address our perennial concern, i.e. developing non-science students' advanced conceptual knowledge that requires a foundation in science as the pre-requisite. We also felt the synergy generated by drawing together the expertise of the three partner institutes in creating a variety of modules and suitable Moodle tools that could be applied to a wide range of courses in a flexible way.

However, as revealed by the evaluation by various stakeholders, there remain a number of challenges that need to be met in the coming trials to achieve our objectives. These challenges involves pitching the module contents at a level of complexity appropriate to our target groups, identifying and supporting students in need, using a broader range of e-learning tools to cater for diverse abilities and learning styles, making learning activities more interactive and interesting, incorporating more inquiry activities to enhance students' understanding of concepts and their capacity for scientific thinking, encouraging students to reflect on their learning and learning difficulties, strengthening the provision of feedback and support to students in need, and enhancing the integration of the e-learning modules into the courses. The last point can be possibly addressed by closer coordination between module writers and course lecturers, further integration of self-directed learning on Moodle with conventional types of learning (e.g., face-to-face contact in lectures), setting aside class time for e-learning, holding quizzes in the class to assess self-directed learning, and greater degree of facilitation by the course lecturer to guide students through concepts that are difficult to master. These challenges will be dealt with in our second and third rounds of module design and trials.

In summary, this project is a challenging in that it applies blended learning approaches to solve a perennial teaching and learning problem facing both student-teachers and teacher educators arising from the special school curriculum context in Hong Kong. The success of the project hinges on whether the student-teachers can be motivated to learn basic science contents in addition to the contents covered by their major courses, and whether this kind of blended learning can boost their confidence in learning science, a subject which most of them had opted out in their senior secondary school years. It is thus important to develop more creative and innovative learning approaches to exploit possible resources available to address the learning problem which is difficult to be resolved by conventional means.

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Appendix A

Finalized list of modules to be developed in the Project

Domain 1: Scientific thinking and inquiry

Basic	Advanced
SI Application: Planning and investigation into purifying water	Science and Technology
The processes of Scientific Inquiry (Part 1)	The processes of Scientific Inquiry (Part 2)
What is science and the nature of science	Development of scientific knowledge through inquiry
	Comprehensive Scientific Inquiry course with 5E
	Science and Society

Domain 2: Energy and physical phenomena

Level	Area 1: Energy	Area 2: Physics Principles and phenomena
Basic	Different forms of energy	Electricity
	Energy conversions	Force and machine
Intermediate	Generation of electricity	Wave
	Nuclear energy	Transfer of thermal energy
Advanced	Lighting technology	Radioactivity

Domain 3: Materials and the Environment

Level	Area 1: Material Science	Area 2: Environmental Science
Basic	Structures in materials	Basic Chemistry for Environmental Science
	Daily life applications of selected materials	Basic Biology for Environmental Science
Intermediate	Metals and alloys	Environmental pollution
	Polymers and Ceramic	Environmental and Health impacts
Advanced	Measurement of physical and chemical properties of materials	Environmental monitoring
	Investigations of different properties of materials	Environmental pollution control

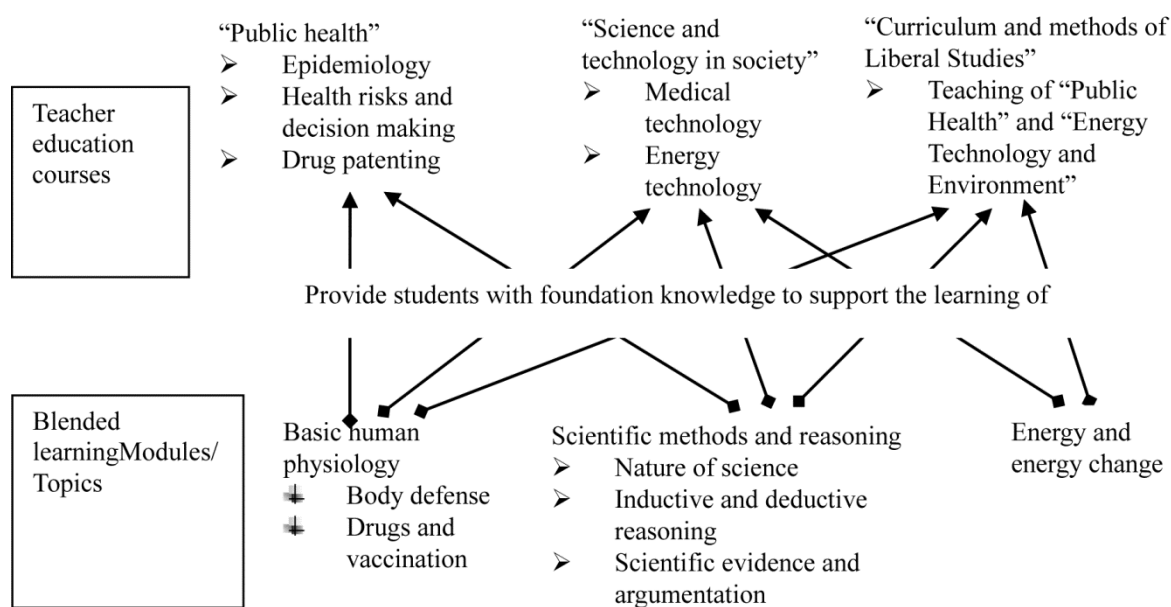
Domain 4: Life and health sciences

Level	Area 1: Life science	Area 2: Basic human anatomy and physiology
Basic	Chemical basis of life	Cellular organization
	Cellular energetics	
Intermediate	Biodiversity and Evolution	Human physiology
	Viruses and Microorganisms	Body immune system
Advanced	Reproduction and Genetics	Homeostasis
	Ecosystem	Basic epidemiology

Appendix B

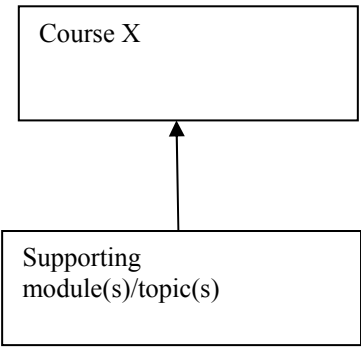
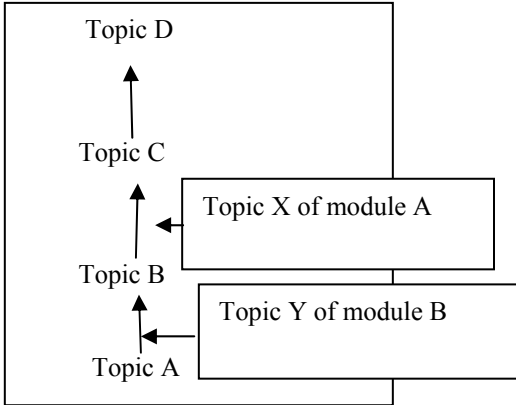
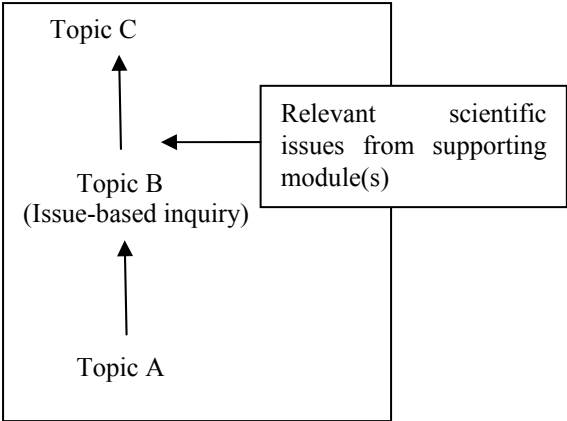
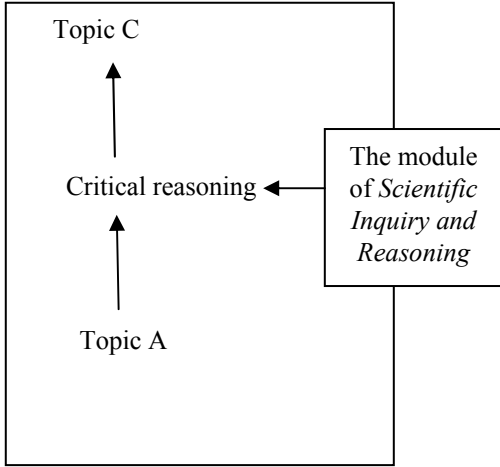
Vertical integration between potential e-learning modules/topics and the courses of the BEd(Liberal Studies) programme (based on the programme structure of HKIEd)

Programme of study: BEd (Liberal Studies)



Appendix C

Some examples illustrating how the foundation science modules /topics can be integrated with existing course contents

<p>Scenario One: Students go through a module or modules assigned by the course lecturer before they pursue a course to build the essential scientific concepts.</p>  <pre> graph BT A[Supporting module(s)/topic(s)] --> B[Course X] </pre>	<p>Scenario Two: Students go through relevant topics of different modules assigned by the course lecturer/tutors before they pursue a topic or topics of the course to build the essential foundation knowledge basic to that topic or topics.</p> <p>A science-related-interdisciplinary course</p>  <pre> graph BT A[Topic A] --> B[Topic B] B --> C[Topic C] C --> D[Topic D] E[Topic X of module A] --> B F[Topic Y of module B] --> A </pre>
<p>Scenario Three: The tutor uses a science issue and its principles behind as cited in a module as a trigger to guide students to approach the issue from alternative perspectives. Conversely, they may draw on scientific evidence/data relevant to the issue as cited in that module to provide additional arguments from a scientific perspective to enrich the discussion and to encourage multi-perspective thinking and decision-making.</p> <p>A science-related interdisciplinary course</p>  <pre> graph BT A[Topic A] --> B[Topic B (Issue-based inquiry)] B --> C[Topic C] D[Relevant scientific issues from supporting module(s)] --> B </pre>	<p>Scenario Four: In the Liberal Studies (LS) methods course, students study the blended module of <i>Scientific Inquiry and Reasoning</i> to strengthen their understanding of the nature and processes of scientific reasoning and to integrate this with other perspectives in teaching critical reasoning to senior secondary students.</p> <p>An LS methods course</p>  <pre> graph BT A[Topic A] --> B[Critical reasoning] B --> C[Topic C] D[The module of Scientific Inquiry and Reasoning] --> B </pre>

GRADUATE STUDENTS PERFORMANCE IN FULLY ONLINE LEARNING AND BLENDED LEARNING AT OPEN UNIVERSITY MALAYSIA

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Abstract

OUM has just introduced totally online learning for some of its post graduate programmes like the Master of Business Administration and Master of Management that would allow more working adults to pursue higher education without sacrificing their jobs and busy working schedules. The present paper reports a case study of a cohort of Master of Management students doing an Organisational Behaviour course, one group consisting of four students following fully online learning mode (OL students), while another four students doing a blended learning mode (BLM students) consisting of face-to-face class meeting (5 meetings of 3 hours each) and online collaborative learning. The case study was on the students' performance on individual assignment project for the course. Individual assignment in this course carries a substantial component of marks that contribute sixty per cent of the overall total course marks. Hence the students are very concerned about the course assignment work in the hope of scoring good marks that would offset any adverse performance in their final examination results. The results of the two groups of students, based on average of the percentages were as follows: Average overall marks for the OL students at 70.25% were quite good, although lower than the average overall marks for the BLM students, at 77.0% (9.61% difference). Based on the six evaluation criteria for the assignment project, the BLM students, on average, fared better than the OL students on five of the criteria, while the OL students scored better (13.6% higher) than the BLM students on "Recommendations to transform behaviour". On the whole, the fully OL students performed quite well in their assignment project, although they were only guided by the facilitator through the online e-forum.

Introduction

Smart and Cappel (2006) observed that many writers use the terms online learning, e-learning, and web-based learning interchangeably. Online learning can be conducted in a variety of ways, such as through the use of asynchronous online interactions or synchronous online interactions. The asynchronous interactions utilise discussion tools like emails, bulletin boards, and computer conferencing. Asynchronous online discussion tools allow for threaded discussions and are therefore useful for tracking and monitoring the online discussion (Ng and Cheung, 2007).

Universities and colleges developed courses and programmes online to appeal to a student population of mainly working adults who otherwise have limited access to higher education (Liaw and Huang, 2002). Online distance education (ODE) began to spread along with the increased accessibility to the internet from 1995 onwards (Bates and Pool, 2003). Although online learning continues to grow rapidly, it still remains at an early stage of development. Many aspects of online learning remain to be explored such as students' perception and reactions towards online courses and the approaches to enhance online learning effectiveness (Smart and Cappel, 2006).

There are studies that report negative feedback of students' reaction towards online learning, such as learners' frustration, anxiety, and confusion, learners' feeling of isolation, and high attrition rates (Frankola, 2001). Other studies reported that online students need to be more disciplined, better equipped with writing skills, self-motivation and time commitment for learning (Serwatka, 2003). Based on these online learning limitations and drawbacks, some researchers recommended "blended learning" approach which is a hybrid delivery approach that combines elements of online learning with the traditional class environment (Smart and Cappel, 2006).

Open University Malaysia (OUM) since its inception has been using blended learning approach as its mode of course delivery. For the undergraduate courses, the face to face component comprises of 4 classroom meetings of two hours duration for each meeting. For the graduate programme courses, the face to face component consists of 5 classroom meetings of 3 hours duration for each meeting. In between these face to face traditional class room meetings, students can be engaged with other students (student-student) or with the tutor/ facilitator (student-tutor/ facilitator). Recently, however, OUM has embarked on fully online delivery mode for some of its undergraduate and graduate courses and programmes. While the number of courses and programmes being offered in fully online mode has increased, and the number of students taking up these fully online courses and programmes are also increasing, there is yet to be any comprehensive study done to evaluate these efforts. The present paper is an initial attempt to evaluate the performance of graduate students taking an Organisational Behaviour course fully online and compare their performance against the performance of students taking the same course in the same semester using the blended mode of learning approach.

Students' Perception towards Online Learning

According to Daymont and Blau (2008) students seek online courses because it is consistent with their preferred learning style and personality. The asynchronous component fits in well with those students who prefer written communications rather than oral, face to face communication, or prefers more time to respond to the class discussion or interactions. However, the primary reason appears to be convenience (Hiltz and Shea, 2005). Online mode of learning frees students from class attendance, hence fits in very well for those with heavy work demand or busy travel schedules. The asynchronous online courses with today's technology allows students more flexibility to choose the times when they can be productively engaged in the course rather than be constrained by the fixed scheduled face to face meeting times of the traditional classes.

Although online learning continues to expand, it still remains shrouded with many unexplained variables. For example, researchers still do not understand fully how students perceive and react to elements of online learning, and how to apply fully these online approaches to enhance effective online learning (Smart and Cappel, 2006). According to these authors, learning is enhanced when students are actively involved in the learning, and also when reflective activities are applied in critical thinking or deep learning. Furthermore, learning is also enhanced when assignments given in the course reflect real life contexts and experiences. Active learning also relates to instructional activities which involve students in doing things and thinking about what they are doing.

Liu, Gomez and Yen (2009) state that retention rates of students doing online courses are low and existing research does not provide a well-developed understanding of the unique characteristics of students who persist in online courses. Moreover, Humaidi et al. (2013) summarised that numbers of students participating in online learning is not encouraging, and they suggested that to encourage students to participate in online learning, the acceptance of the online portals should be increased. According to technology acceptance model (TAM), the attitude of individuals towards the use of a particular technology is influenced both by perceived usefulness (PU) and perceived ease of use (PEOU) of the technology. Hence to succeed in online learning, students should eliminate attitudes such as aversion and anxiety towards the use of technology in learning.

Students Performance in Online Learning

The results of research studies tend to indicate that the quality of learning through online distance education (ODE) is as good as the learning in face- to- face education (Jahng, Krug and Zhang, 2009). The same writers have also stated that a good review of the literature has also concluded that DE courses are as effective as face to face courses. Shachar and Neumann (2003) looked at the final academic performance grades of students and concluded that the final grades of those enrolled in DE programmes are better than those enrolled in traditional face to face programmes.

Fjermestad and Hiltz (2005) as cited by Ng and Cheung (2007) reported that in 86% of the 30 studies that compared face- to-face courses to courses using the asynchronous mode, the asynchronous mode was either better or equal to the traditional face to face mode. One advantage commonly cited by students participating in asynchronous online discussion was that they have more time for reflection and their discussion was therefore more in depth (Branon and Essex, 2001). Another advantage is that asynchronous online discussion allows all students, instead of one at a time (as for face to face discussion) the opportunity to participate in the discussion of a topic.

Similarly Whitman et al. (2005) who reported on the final project grades showed that the final projects scores were comparable between face-to-face and computer mediated communication (CMC) design teams, but more variability in the results were observed with CMC teams. Reasons given by the authors were that students in CMC were not very familiar with the use of technology as an exclusive means of communication for learning and therefore found the experience to be challenging. Some of the academic services most expected by students in the online learning environment according to Choy, McNickle and Clayton (2002) were:

- Clear statements of what they are expected to learn, and
- Communication with teachers using a variety of methods, for example, e-mail, online chat, face to face

Kirkwood and Price (2008) also observed that since most distance learners are working and therefore busy people, they have to be selective in what they study in order to survive. Therefore they turn to assessment requirements to guide the choices they make. Some students are assignment focused if it forms a major component of their course assessment. Assignment therefore has a substantial impact on their study behaviour. Humaidi et al. (2013) on the other hand, opined that there is no specific factor influencing student outcomes in online learning. Student performance can be affected by a number of factors such as study habits, prior knowledge, communication skills, time available for study, and lecturer effectiveness. However, discussion board usage could help students in online learning as it was found to be positively and significantly related to overall course performance.

Methodology

This paper reports students' performance on course assignment project for both fully online students and blended mode students who registered for the Organisational Behaviour (OB) course for May semester 2015. These were the Master of Management students who were tagged to be in the present writer's class at the Bangi Learning Centre in Selangor. There were four students registering in the blended mode and four students registering as fully online students. However, in addition to the blended mode and fully online students, the present writer was also the e-facilitator for all blended mode students who registered for the same OB course for that May semester 2015 throughout all other learning centres. Altogether there were 34 students in the e-facilitation group tagged under the present writer's tutelage.

In this paper only the four blended mode students and four fully online students were of interest because they were directly under the present writer's tutelage for conducting the face to face classroom interactions, online discussion forum as well as grading their assignment project report. For the other learners they were handled by other facilitators at other OUM learning centres. The assignment project is very important for the students because it contributes 60% to the overall course marks. As Kirkwood and Price (2008) stated the importance of the assignment mark to the overall performance of the course had a big impact on the students study behaviour.

The Assignment Question

The assignment question was on a specific topic but framed in open ended and generalised manner. It was meant to bring students to higher levels on Bloom's Taxonomy categories of application, analysis, evaluation and synthesis. The question was uploaded to MyVLE one week before the first face- to- face traditional class started, and could be accessed by all the students who registered for the course.

First Face-to-Face Traditional Class Meeting (F2F-1)

One week before the F2F-1, the writer reminded all the learners about the assignment upload, the need to download the assignment question, and the need to read the relevant topics in preparation for the coming F2F-1.

- The blended mode students started to ask questions about the assignment in the F2F-1 meeting. About one hour of the 3 hour F2F class times was spent on the assignment question.
- There were no questions and discussions about the assignment being raised in the e-forum. However a good number (17 participants) has entered and read the e-forum.
- The writer based on the questions raised in the F2F-1 explained further about the requirements of the assignment in the e-forum, steps to be followed in working towards solution of the assignment question and the marks distribution for the benefits of the fully online students as well as those following the e-facilitation.

The F2F-2 session for the blended mode students was held 2 weeks after the F2F-1. In this meeting, the students requested about 45 minutes of the classroom time for the assignment project work.

- The writer asked the students why they did not pose these questions in the e-forum, so that other learners could participate, gave and shared ideas and the facilitator could give opinions which could be shared by all other learners. The interesting answer given by the students were (i) they found difficulty in formulating ideas and questions to be posed in the e-forum, and (ii) they were not used to using the e-forum for discussing serious academic matters.
- The writer did not explain and answer fully the students' questions in the F2F-2, but asked them to enter the e-forum for more detailed explanation and if they required further explanation, they had to ask those questions in the e-forum. A strategy to force the students to be more active in the online discussion.
- The presence of the fully online students was not visible so far either in the e-forum or in other modes of communication. Since the time for the completion of the assignment project was approaching fast, the writer had to address directly and personally with them such as: "Hi Mr. A, I am your online facilitator. Have you started with your assignment, how is it progressing?" The same statements were repeated to the fully online students as a group, through their e-mails addresses, in the hope that even if they did not participate in the e-forum, they still had the opportunity to interact with the facilitator.
- The response from the fully online students came through the emails. After further communication, they intimated that they had not entered the MyVLE and therefore not participated in the e-forum because they were not sure of the whole thing and had no friend to help them.
- After step by step tutoring on MyVLE, they managed to open the e-forum, but they requested for discussion they be allowed to use the e-mails (more comfortable) and SMS, but they would just follow and read the e-forum discussion.

Step By Step Facilitation Design for the Assignment

Concerned about the slow progress in the assignment work, high anxiety, and low participation in the e-forum, the writer changed the reactive approach (students started the questions) to pro-active approach (facilitator set the pace and led the discussion) in the online or e-forum discussion. This was not aimed to spoon-feed the learners but to provide the leads, guidance and path way to complete the assignment work. They were asked to follow the prescribed steps (Step 1 to Step 6) based on the assignment rubric given together with the assignment question. For example, for the STEP 1, the writer made the following posting in the e-forum (Assignment). The postings were in short and easily read instructions and suggestions so that the learners can easily follow and perform the tasks:

1. *Dear learners. For step 1, you will have to read at least 5 journal articles or books about the employee-related situation that you are interested to study in your selected organisation. To do the step 1, you need to know what employee-related situation is and how you are going know whether you have chosen an appropriate employee-related situation. For doing this, you need to read your OB textbook or any other books on OB that you have. Give your comments or suggestions or questions in this e-forum for further clarification and discussion.*

Since the writer has already explained this in the face-to-face class as well as in the earlier e-forum posting, not much discussion was observed on this topic. The writer posted a new message in the forum entitled “STEP 1- Continuation 1.

2. *Dear Learners. Have you selected or identified your employee-related situation that you want to study? To help you in your search for the meaning of this term, let me give my thoughts on this. Employee-related situations concern with employee- work related behaviour, experiences, attitudes and others. For example work stress is an employee-related experience. Absenteeism is an employee work related behaviour problem. Leadership is also a topic which you can study for your assignment because it also relates to employee work performance and behaviour. All these topics are relevant and explained in your text book.*

The writer allowed some time for the students to respond on the posting. Some of them began to ask questions whether their chosen employee-related situation was relevant or not and where to look for the articles and what to do with those articles. The next and subsequent posting were more content focused and related to the journal and things to read in those articles. The next posting of the message entitled “STEP 1- Continuation 2.

3. *Dear Learners. When you read your journal articles, look for the following issues or aspects and theories:*
 - (a) *The definition of the employee-related situation and theories discussed in the articles.*
 - (b) *How did the individual and group behaviours and organisation structures affect the employee related situation?*
 - (c) *What OB theories were discussed in the articles?*
 - (d) *How did this employee behaviour affect organisational goals and strategies?*

The similar pro-active approach was repeated for the rest of the prescribed steps (2- 6 steps) until one week before the 4th F2F class meeting (F2F-4) because by that time they should be finalising their work to be submitted online as well as the hard copy version to the facilitator during the F2F-4 class meeting.

Results and Discussion

All the students (blended mode as well as fully online) who were tagged under the writer's tutelage submitted their assignment reports before the submission deadline (at or before F2F-4). The following observations were recorded about the preference of students for the learning technology usage:

	Types of students	e-forum	e-mails	Phone/sms
1	Blended mode learning	Used e-forum to read only. Few participated in discussion. All are learner-facilitator interaction.	Very few used emails to communicate with the facilitator	Very few used phones to communicate with the facilitator
2	Fully online students	Lower preference. Used to read only	Higher preference	Few used to communicate with the facilitator

The pattern of usage of the learning technology among the present group of students was in line with what Humaidi et al. (2013) termed as technical readiness for online learning. The low participation rate in online discussion can be due to the learners' unpreparedness in terms of knowledge, attitudes, skills and habits in ICT utilisation. Kirkwood and Price (2008) reasoning that students' study behaviour was driven by their assessment and if it rewards only on the outputs of individual students, then there is little reason for them to get too involved in the forum discussion through student-student interactions and even the student-facilitator interactions. It would be sufficed for them to read what is given or explained by the facilitator in the e-forum.

Students Performance in the Course Assignment

The students' assignments were not differentiated in terms of whether they are from the blended mode group or fully online group. They were marked as one group, but sorted into blended mode or fully online students only after all the assignments have been marked. The total and average marks scored by the blended mode and fully online students on their assignment work were as follows:

Marking criteria	Blended Mode Students		Fully Online Students	
	Total marks	Average marks	Total marks	Average marks
1 (10 marks)	32	8	27	6.75
2 (15 marks)	53	13.25	44	11
3 (35 marks)	108	27	95	23.75
4 (20 marks)	59	14.75	67	16.75
5 (15 marks)	43	10.75	35	8.75
6 (5 marks)	13	3.25	13	3.25
Marks	308	77	281	70.25

Note: a. The number of blended mode students was 4; the number of fully online students was 4 Marking Criteria: 1. Review of 5 journal articles; 2. Description of employee-related situation; 3. Examination of reasons for behaviour and its effects; 4. Recommendation to transform behaviour; 5. Summary; 6. Writing styles and referencing.

Overall, the average marks scored by the blended mode students were higher than the fully online students by about 9.61% that was 77% against 70.25% obtained by the fully online students. Based on OUM grading system the average marks for the blended mode students were A-, while the average marks obtained by the fully online students were B+. Considering that the fully online students had no chance to meet face to face with the facilitator, but only following the online postings by the facilitator and emails communication, their achievements were commendable. Moreover, none of them had dropped out of the course during that semester.

The satisfactory performance of distance education students have been reviewed by many authors before this (eg. Hong, 2002; Shachar and Neumann, 2003), but not many writers have reported graduate student performance on their course assignment work as driven by the course facilitator's guidance and instructions. The present result supported Choy et al. (2002) contention that online learning students were happy with their study if they were happy with the expected services provided by the facilitator and the course. In the present study, although the blended mode students scored higher on four of the assignment marking criteria, the fully online students scored average higher marks on the quality of the recommendation to overcome the performance problems. Average marks for the writing style and referencing were similar between the two groups of students. The facilitation approach for the online students adopted by this study supported the view stated by Stansfield, McLellan and Connolly (2004) that the teacher (facilitator) would assist students' learning by encouraging them to articulate and elaborate their ideas and fostering their reflection. Students' learning could also be fostered by the teacher's reviewing and providing comments, guidance and support in the completion of their learning exercises.

Conclusion

The fully online students need more close guidance and instruction from their facilitator as they had no face-to-face meeting opportunity using the normal communication technology such as emails and phones to supplement the online forum or e-forum. They could perform as well as the blended mode students in the assignment work project if the instructions and course expectations given were clear and concise. They would tend to stay and completed their course as what the blended mode students did in the same course.

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Asian Association
of Open Universities



Sub-Theme 4

Quality Assurance in Open and Distance Learning (ODL)

PROCEEDINGS

CATERING FOR DIVERSE NEEDS FOR STUDENT SUPPORT: DIFFERENCES BETWEEN FACE-TO-FACE AND DISTANCE-LEARNING STUDENTS

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Abstract

Student support, as a crucial part of educational delivery, is closely related to many aspects of students' lives. Catering for students' diverse needs for support services poses challenges for all education providers; and for institutions offering courses in different educational modes, the challenges are even greater. This paper addresses the different needs of face-to-face and distance-learning students for student support services. It presents the experience of the Open University of Hong Kong, which caters for both face-to-face and distance-learning students. The provision of these two modes of education calls for a comprehensive assessment of students' needs in order to develop and provide effective support services. This study aimed to (1) examine the need for student support services and facilities among student groups, and (2) identify the major differences in this regard between face-to-face and distance-learning students. Both quantitative and qualitative methods were employed. An online survey was conducted to evaluate student preferences for various services and facilities; and valid responses were collected from 461 students, including 374 face-to-face and 87 distance-learning students. Also, eight focus groups were organized to collect student and staff opinions on student support services. The findings from the survey reflect the dimensions of services and facilities that the different groups of students valued most. For example, career development, which was ranked as the most important dimension by both student groups, shows the huge demand for relevant support in this area. Students' expectations also call for additional resources to be put into internship programmes for face-to-face students, and academic advisory services for distance-learners. The responses collected in the focus groups provided further insights into the needs of students — such as the provision of a gymnasium, residential halls, exchange programmes and social events — to enrich their learning experiences. Based on the results, the selection and provision of student support services are discussed.

Introduction

Student support has become a broad concept covering a wide range of services from personal counselling and financial assistance to sports and recreational activities. It has been changing over time to cope with societal developments and students' needs (Shutt, Garrett, Lynch & Dean, 2012). Despite its broad and dynamic nature, and the fact that educational institutions may emphasize certain service areas, student support generally shares similar objectives, such as enhancing students' learning experience, facilitating their academic success, and promoting all-round development for their well-being (Evans, 2001).

Given the wide diversity of individual student needs, no single support system can suit all students equally. For instance, Okopi and Ofole (2013) showed the varied needs of students at a university for counselling at different stages of their studies. An institution therefore has to assess the needs of its students in order to prioritize and rationalize the resources it allocates to support services and facilities. Such a needs assessment may cover aspects such as identifying indicators of student satisfaction (Islam, Jalali & Ariffin, 2011; Martirosyan, 2015; Schreiner & Nelson, 2013); evaluating

the outcomes of support (Okopi & Ofole, 2013); and addressing inadequacies in support provision (Adegbile & Oyekanmi, 2009; Gujjar, Chaudhry & Chaudhry, 2009).

The support needs of students can be influenced by their mode of study. Students studying in face-to-face (FF) and distance learning (DL) systems are different in many respects — for example, in age, employment status, frequency of visits to the campus, and contact with instructors and classmates. The divergence in their support needs has not been adequately addressed in the literature. This issue has become more salient in recent years as there are a growing number of dual mode institutions offering both FF and DL programmes (ICDE, 2015).

This study focuses on the experience of the Open University of Hong Kong (OUHK) in catering for its diverse student needs. As an institution which provides open and flexible learning, covering both FF and DL programmes, it has to offer support services to these two groups of students from very different backgrounds and with different expectations for their learning experience. The proper selection and provision of student support has been challenging and is very important for the university.

This paper, which illustrates the support needs of the FF and DL students in the OUHK, involved both quantitative and qualitative feedback from students and staff. The similarities and differences between these two groups of students are highlighted, and provide a relevant reference for institutions in a similar situation for planning their support provision.

Literature Review

The foci of student support have been changing with time. Shuttet *al.* (2012) examined the historical development of student affairs and found that the student affairs profession has shifted from focusing on student services to student development, student learning, and the assessment of learning outcome. This suggests a change in student needs for support and the assessment needs for service prioritization and development.

Studies of student support needs cover different areas involving students' experience, perceptions and preferences for support services. For example, Douglas, Douglas, McClelland and Davies (2015) studied undergraduate students' experiences of teaching and learning and support services, and how these experiences can influence the tendency to continue their university studies and recommend their university to others. Nichols (2010) assessed the university experiences of DL students with different academic performance so as to evaluate the outcome of a retention intervention programme. The assessment could also help to address the inadequacies in a university's student support (Adegbile & Oyekanmi, 2009; Gujjaret *al.*, 2009; Rumble, 2000) and planning specific student services (Perron, Grahovac, Uppal, Granillo, Shuter & Porter, 2011).

Face-to-face and Distance Learning Students

The mode of education is a factor which affects the needs and expectations of students for support services. FF teaching institutions usually provide a broad range of services. For example, Shi, Drzymalski and Guo (2014) listed 14 service items which commonly contribute to students' satisfaction, as a subjective evaluation of education outcomes (Elliott & Shin, 2002). They covered the dimensions of academic issues (e.g. varieties of courses, curriculum organization); facilities (e.g. residence facilities, computer access); and administration (e.g. healthcare services, career planning). Also, Wilkins and Balakrishnan (2013) found that the factors which influence students' satisfaction with their institution included the quality of lecturers, facilities and social life, and the effective use of technology. In addition, O'Driscoll (2012) identified the significant determiners of students' perceptions of service quality as academic support, welfare support and course communication structures. Overall, Islamet *al.* (2011) reported that academic services that can develop and instil good

values, attitudes, character and a strong personality were more important for students' satisfaction with an education institution.

Attention to DL student support has centred mainly on the use of education technology to enhance their learning outcomes and prevent dropout (Agorogianni, Zaharis, Anastasiadou & Goudos, 2011; Chatpakkarattana & Khlaisang, 2013; Luo, 2014). According to Smith (2004), academic support is far more important than the other types of support for DL students. Also, Sookdeo and Ramphal (2013) investigated the difficulties encountered by DL students, such as a lack of efficient feedback on their learning problems and social isolation, and proposed a set of guidelines for effective teaching and learning support. Tresman (2002) stressed the importance of raising DL students' satisfaction level for improving their retention rate. Strategies have been recommended, including having advisory and guidance staff to help students make informed course choices, and giving the easy access to their academic records to assess and manage their study progress. Forming a learning community together students online for interaction and collaboration has also been suggested (Chatpakkarattana & Khlaisang, 2013; Luo, 2014; Tresman, 2002), as such a community can provide mutual support and enrich students' learning experience in the online learning environment.

The Present Study

The findings of related studies reveal a research gap on the support needed by FF and DL students. First, these two groups have rarely been assessed and compared in the same context. Second, studies on student support, in particular for DL, appear to have focused on academic services, with non-academic support not being adequately examined. Third, as the roles and functions of the student service profession have changed with time (Shuttet *al.*, 2012), it is important to keep abreast of these changes and understand current students' needs and expectations for support. An assessment of the support needs of FF and DL students is thus of great value to an institution for devising and providing effective support for both groups.

Methodology

A study was conducted to gain a comprehensive understanding of the FF and DL students' support needs in the OUHK, so that suitable and timely support could be provided. It aimed to answer the following questions:

1. What are the needs of FF and DL students for student support services?
2. How important are the support services and facilities for students?

The study followed Hettler's (1980) wellness model which covers six dimensions of student development, viz. the occupational, physical, social, intellectual, spiritual and emotional dimensions.

This model has been widely applied in the design of student support by higher education institutions — for example, the University of Pittsburg (n.d.), the Ohio State University (OSU) (n.d.) and Harvard University (n.d.) — for promoting students' holistic development.

Both quantitative and qualitative methods were employed in the research. Quantitative data were collected through an online questionnaire completed by a total of 374 FF and 87 DL students in September 2014. The questionnaire evaluated students' preferences for the dimensions of development, and a broad range of services and facilities that were not offered in the university.

The FF and DL student respondents were different, mainly in terms of their employment status and frequency of contact with classmates and teaching staff. More than half of the FF students (57%) had no employment; 41% of them worked part-time; and only 2% had full-time jobs. Comparatively, 77% of the DL students worked full-time, 7% part-time and only 16% had no employment. On the frequency of contact, 80% of the FF students had face-to-face contact with classmates or teachers at least once a week, in contrast to only 21% of the DL students, with the other 79% having face-to-face contact twice a month or even less.

A total of eight focus group interviews were also held to collect students' and staff's opinions on student support services. The participants included 25 FF students, 6 DL students, and 10 university staff. The student interviewees were recruited from different programmes and different academic years. They shared their views and experiences of students' needs for support facilities and services according to the six development dimensions.

Results

Survey

The survey explored students' ranking of the development dimensions, and support facilities and services, according to their level of importance.

Figure 1 shows the average ranks of FF and DL respondents on the importance of the six development dimensions. On average, career development was ranked the most important for both FF and DL students. FF students ranked the moral, intellectual and social development and emotional management similarly on average, while DL students ranked social development clearly lower than the other three. Physical development was ranked the lowest by the majority of respondents.

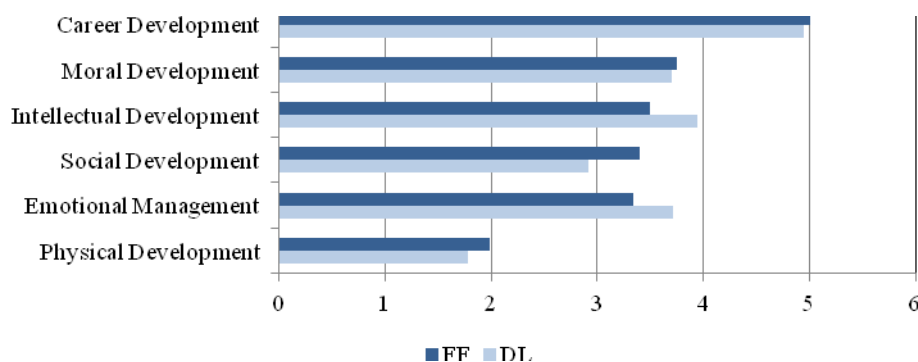


Figure 1: Average ranks of the development dimensions (the higher, the more important)

Figure 2 shows the average ranking of the facilities. A student service centre (providing non-catering retail services, such as stationery, binding and photocopying) was on average ranked the most important by both FF and DL respondents, followed by a convenience store and bookstore. However, there were also discordant needs between FF and DL students. For example, the former ranked a health centre and gymnasium higher, while the latter ranked a bank and postbox as more important.

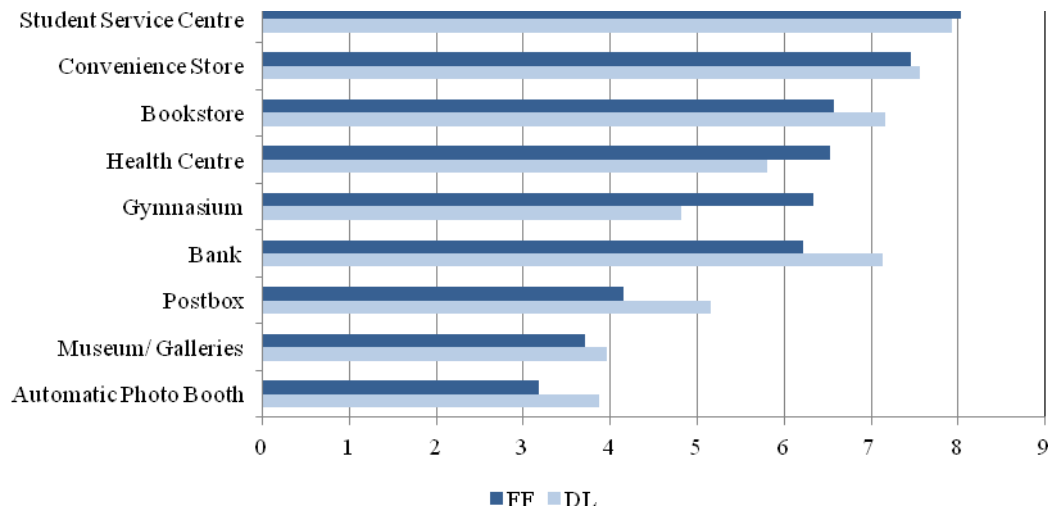


Figure 2: Average ranks of facilities (the higher, the more important)

Students also suggested other facilities which were not provided by the university or were regarded as inadequate. As shown in Table 1, both FF and DL respondents mentioned the need to enhance the canteen facilities by providing more dining space and a greater variety of food. FF students also expressed a need for other facilities, especially a residential hall and café.

Table 1: Other Facilities Suggested by Students

Facilities	Frequency (FF)	Frequency (DL)
Canteen	25	6
Café	23	1
Residential hall	38	1
Swimming pool	7	0
Sport complex	6	0
Library	3	0

Figure 3 shows the average ranks for support services. Financial assistance was considered by FF students as the top priority; and they ranked internship programmes, exchange programmes and student activities clearly higher than the DL students did. Compared with FF students, DL students had a greater need for services related to career development, academic advice, and counselling. It is worth noting that an academic advisory service was ranked as the most important by the largest proportion of DL students.

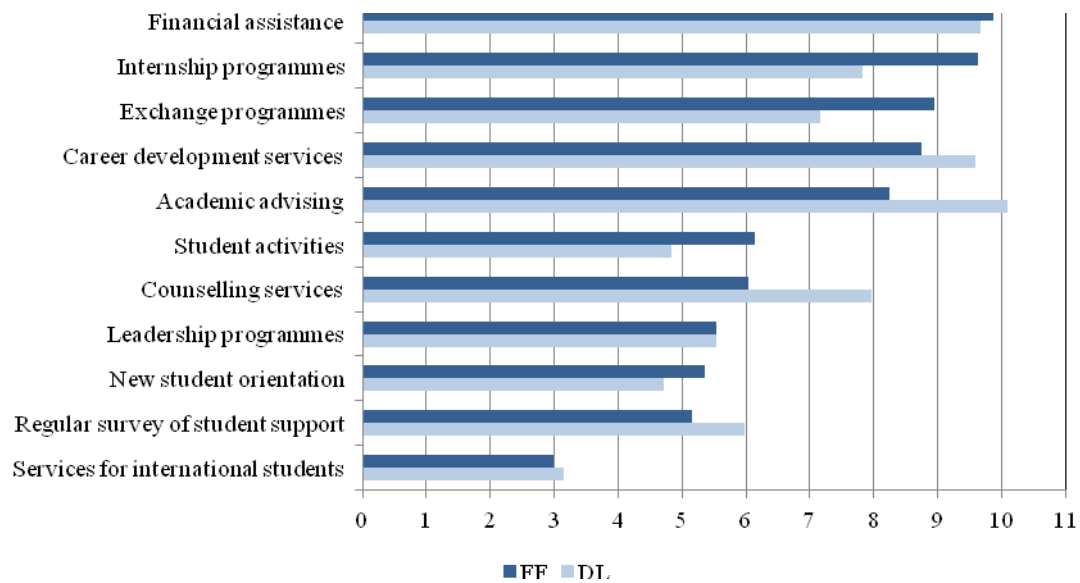


Figure 3: Average ranks for student support services (the higher, the more important)

Focus Groups

Table 2 lists the suggestions from students and staff for student support services and facilities according to the six development dimensions.

Table 2: Suggestions for Student Support Services and Facilities

Suggestions	FF Students	DL Students
<i>Physical</i>		
<u>Health services</u>		
• Provide a university medical service	✓	
• Give more information on physical activities and health tips		✓
<u>Sport facilities</u>		
• Provide a gymnasium in the university	✓	
• Provide a borrowing service for sports equipment	✓	
• Provide free venues for sporting activities	✓	
<u>Sport activities</u>		
• Organize sports teams	✓	
• Offer yoga courses	✓	

<p><i>Occupational</i></p> <p><u>Career services</u></p> <ul style="list-style-type: none"> • Provide more internship programmes • Organize more recruitment talks and form a greater recruitment network • Organize alumni-sharing of work experience • Set up a database of common interview questions and related resources • Disseminate more job advertisements to students <p><u>Support on future studies</u></p> <ul style="list-style-type: none"> • Provide a consultation service for further studies • Organize information sessions on further studies <p><u>Support on examinations for professional qualifications</u></p> <ul style="list-style-type: none"> • Set up a database of sample examination papers • Provide talks on examination skills 	<p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p></p> <p></p> <p></p> <p></p> <p>✓</p> <p></p> <p>✓</p> <p></p> <p></p>
<p><i>Intellectual</i></p> <p><u>Academic-related activities</u></p> <ul style="list-style-type: none"> • Organize more academic exchange programmes with local and overseas universities • Provide short courses on various disciplines • Provide an academic advisory service • Organize talks and seminars on social issues <p><u>Study facilities</u></p> <ul style="list-style-type: none"> • Provide more study rooms <p><u>Learning resources</u></p> <ul style="list-style-type: none"> • Share library resources with other universities • Provide a subscription discount on publications • Sell reference books and required readings in the university 	<p>✓</p> <p>✓</p> <p></p> <p></p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p> <p>✓</p>	<p></p> <p></p> <p>✓</p> <p>✓</p> <p>✓</p> <p></p> <p></p> <p>✓</p> <p></p>
<p><i>Emotional</i></p> <ul style="list-style-type: none"> • Provide a comfortable environment for the counselling service • Give information related to the counselling service to academic staff so that they can refer students to the service 	<p>✓</p> <p>✓</p>	<p>✓</p> <p>✓</p>
<p><i>Spiritual</i></p> <ul style="list-style-type: none"> • Organize cultural exchange programmes • Organize more community services 	<p>✓</p> <p>✓</p>	<p></p> <p></p>

<i>Social</i>		
<u>Social activities</u>		
• Organize student forums for students to voice their views	✓	✓
• Organize more social activities for students to develop closer relationships with each other	✓	
• Organize activities for enhancing social skills	✓	
• Organize more leadership programmes	✓	
• Organize activities for helping international students to adapt to the local culture	✓	
• Organize study groups or field trips		✓
• Organize more social activities for alumni		✓
<u>Social organisations</u>		
• Provide more variety in student organizations	✓	
• Provide more venues and facilities for student organizations	✓	
• Allow DL students to join student organizations		✓
<u>Facilities that promote social interaction</u>		
• Provide student residential halls	✓	
• Provide more common areas for students	✓	

As shown in Table 3, the students and staff also suggested other kinds of student support services and facilities, and raised some administrative issues.

Table 3: Suggestions for Other Student Support Services and Facilities

Suggestions	FF Students	DL Students
<u>University facilities</u>		
• Provide venues for study that are open for 24 hours	✓	
• Provide more electric sockets in the campus for notebook computers	✓	
• Provide more canteens	✓	
• Extend the opening hours of university facilities to cope with DL students' class schedules		✓
<u>Student welfare services</u>		
• Provide welfare support by setting up a student service centre	✓	✓
• Provide a postal service	✓	
<u>Financial services</u>		
• Provide scholarships as a form of encouragement		✓
<u>Delivery of information</u>		
• Use more channels for the promotion of student services and activities	✓	✓
• Provide a direct channel to students for enquiries	✓	
<u>Administrative issues</u>		
• Provide a channel for international students to seek help	✓	✓
• Select a group of student ambassadors as a bridge between the university and students	✓	✓
• Develop effective communication channels among students, academic units and the Student Affairs Office	✓	✓

Various areas of student services and facilities were emphasized by FF and DL students. The needs of FF students were focused more on facilities and activities that could enhance their career development, physical wellness, spiritual values and social relationships. For instance, they wished to have a medical service, a gymnasium, residential halls, and more common areas. They also talked about their needs in what they considered as student welfare, such as subscription discounts on publications. They mentioned a number of activities that they saw as important, viz. internships, exchange programmes, recruitment talks, short courses, social activities and community services. Most of them viewed career development as the most important dimension since they needed relevant guidance and support.

DL students were concerned more about support in the intellectual and social aspects. They highlighted the need to have academic advisory support and to buy reference books and required readings in the university. They also mentioned that DL students were quite 'lonely' since, for most of the time, they studied in isolation and had little interaction with classmates. They suggested that the university should expand student organizations, study groups and social activities for them to build up a social network and a sense of belonging to the university. While agreeing that DL students would not use campus services and facilities as frequent as FF students, they expressed their wish to have the opening hours of the services and facilities extended as most of them work during the day on weekdays.

The administration of student affairs was also a concern for the participants, especially the university staff, who saw communication among different parties as of the utmost importance, e.g. the contact between the Student Affairs Office (SAO) and students (especially international students, students with special needs and alumni); the communication between the SAO and the academic staff; and the general promotion of SAO activities. They suggested measures, such as establishing a group of student ambassadors, having a staff representative from each academic unit and using more channels for delivering related information on the support services and facilities.

Discussion

The findings suggest that both FF and DL students have a need for all-round support, despite the fact that their different educational modes may affect their preference for particular types of services and facilities, and ways of service provision.

A notable difference between the preference of FF and DL students was whether the services and facilities are 'campus-oriented'. FF students preferred to have more types of services and facilities provided on the campus, as they would usually stay longer there. For example, the FF students ranked a health centre and gymnasium as more important than the DL students did. They also wished to have a student residential hall and additional catering services, indicating their need to experience a full campus life during their studies. On the other hand, the DL students valued more a collection of convenient services not directly related to study, such as a bookstore, bank and postbox, that they could access given their limited time at the campus. It was also apparent that the DL students preferred support services that can be delivered online. For example, they suggested having more information on health tips instead of the FF students' preference for a medical service. However, they also argued that the opening hours of the university facilities could be extended to cope with the DL students' availability. This suggests their potential need for using campus facilities and services that may be met by having relevant coordination of service provision.

The FF students did not indicate academic support as their top priority, which differs from findings in some related studies that teaching and learning support is one of the most significant factors accounting for student satisfaction (O'Driscoll, 2012; Shi *et al.*, 2014; Wilkins & Balakrishnan, 2013). For the DL students, academic advice was deemed important, showing that they need additional assistance on academic matters. This may be because relevant information and advice could not be obtained as a consequence of their limited interaction with classmates and teachers. Relevant studies (e.g. Tresman, 2002) also reported the significance of academic advisory services for helping DL students to make informed course choices and fine-tune their expectations.

Both the FF and DL students regarded 'career' as the most important aspect of development, but their related support needs were different. The FF students expressed their preference for a wide range of services from internship programmes to recruitment talks and support on examinations for professional qualifications. In contrast, the DL students showed less of a demand for these services, but indicated an interest in having more job postings and information for further studies. Such difference may be due to their different employment status, with most DL students already having full-time jobs.

The DL students indicated a greater need for counselling services than did the FF students. Almäşan and Alexe (2015) explain that DL students experience psychological and emotional difficulties in their studies, such as worrying about their employability after graduation. Although more attention has been paid to this issue in the past decade (Kangai, Rupande & Rugonye, 2011), counselling support still appears to have been underemphasized for DL students compared with FF students.

The administrative issues raised in the focus groups highlighted the importance of effective communication among all the relevant parties in student support. It is crucial for students to be aware of the support available and for the university to identify the students in need and the nature of their needs.

Conclusion

This study has revealed the needs of FF and DL students for support services and facilities. Despite their different learning environment, the two groups of students demonstrated a similar pattern in their choice of development dimensions. Such findings suggest the importance of all-round development for both groups, where as the provision of relevant support has been mainly oriented towards FF students. Non-academic support, such as the areas covered in Hettler's (1980) wellness model, has yet to be widely provided for DL students (Scheer & Lockee, 2003; Thompson & Porto, 2014).

The different needs of FF and DL students, which lie mainly in the types of services and ways of service delivery, pose challenge in selecting and prioritising the provision of support services for an institution. The findings of this study suggest possible ways to make effective use of the support services and campus facilities, one of which is to extend the opening hours of the services to cope with the schedule of DL students. The provision of information about health tips and further study, as suggested by the DL students, can also be extended to the FF students at minimal cost. Given the growing number of institutions offering both FF and DL programmes (ICDE, 2015), it is time to address the challenge of delivering proper support for both groups of students cost-effectively.

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READABILITY OF MODULES AND ITS RELATIONSHIP TO STUDENT PERFORMANCE IN OPEN AND DISTANCE LEARNING (ODL)

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Abstract

Quality assurance of learning modules at Open University Malaysia (OUM) has thus far focused on content, language and instructional design. One important attribute of quality yet to be looked into is readability of the modules. Readability is the ease with which written texts can be understood. Thus, no matter how high the quality is of the content, language and instructional design of the modules, they will be of no use if they are written beyond the learners' readability level. This is the basic premise of the study; it intends to examine the readability of selected modules to determine if they are written at independent or instructional levels, and then this study will investigate if readability of modules is related to the performances of the learners of the related courses. It is hoped that this study will help to indicate the degree of influence that readability has on the quality of learning modules.

Introduction

OUM has been an ODL institution since its establishment in August 2000. In line with its flexible learning model, its various graduate and post-graduate programmes are delivered via tailor-made learning modules. These modules are unique in that they are developed in-house by the university's Centre for Instructional Design and Technology (CIDT), in collaboration with the six OUM faculties. CIDT is an ISO 9001-certified department and thus practises a very stringent approach to module development so as to ensure quality products are delivered to learners. The contents of the learning modules are curated by the respective faculties and then written by experienced professionals and academics engaged by the university. CIDT serves as the production facility in charge of assembling and packing the contents into formats that are suitable for ODL; these include printed materials, downloadable PDF files, mobile apps, web-based contents, video lectures and audio podcasts. The foundation of OUM's learning modules are the printed module books, in which all other learning materials are derived from. As such, the quality of these modules is of the utmost importance. Thus far, quality control has been focused on checking the content, language and instructional design aspects of the modules. To further improve the quality assurance process, **readability** is another aspect of quality that can be investigated to see if it should be included.

Objective of the Study

The main objective of this study is to determine the readability of OUM modules and its relationship to student performance. Doing so could shed light on whether readability has a significant influence on the quality of OUM modules. The study tested a selection of modules using the Flesch Reading Ease (FRE) formula and then compared the findings with exam results of students in the respective courses. A correlation would mean that OUM should consider giving more emphasis on readability in order to improve the quality of its modules.

Research Questions

To achieve the study objectives, the research team began with the presupposition that the students' examination results and the attrition rate for individual courses are potential indicators of the quality of the respective printed modules used, and that readability is an important aspect of quality assurance. The following research questions were then formulated:

“What is the readability level of each selected module?”

“Is there a significant relationship between the readability level of module and the students' performance?”

Significance of the Study

The findings of this research are important as they contribute in general to the pool of knowledge concerning the impact of readability on ODL learning materials. Interest in the readability levels of learning materials was piqued with the advent of university degree-awarding ODL around the early 1970s, pioneered by institutions like the Open University (OU) in the UK. Since then, there have been numerous studies in this field that aim to gauge the significance of readability.

Literature Review of Readability Studies

Through self-assessment of its foundation courses and a survey of students who registered for those courses, OU reported that students' reading skills varied widely while readability levels of the courses also varied greatly (Macdonald-Ross & Scott, 1996). The university noted that students who scored poorly on reading tests were more likely to drop out before completing their courses and further hypothesised that a mismatch between reading skills and the readability levels of course materials was one main factor that hampered students' academic progress. It can be surmised from this study that matching learners' reading skills to the readability of learning materials is important to an institution like OU. This is because ODL differentiates from the conventional learning model in that it affords learners the flexibility in terms of the time and place where they can be engaged in their own education. The trade-off, however, is that learners have to rely more on their ability to self-learn due to the absence or infrequent availability of tutors. Therefore, it is imperative that the learning materials provided by the universities are sufficiently independent in guiding students to achieve their learning goals.

This research seeks to determine if the case of OU is applicable to OUM courses, i.e. whether poor performance, which shall be indicated by exam marks, and high attrition rates are caused by a mismatch between the reading skills of its learners and the readability of its course materials. Nevertheless, our research team is also mindful that reading skills and readability levels by themselves do not account for the entire reading comprehension process. Contemporary views of reading also place great emphasis on the active involvement of the reader, as much of the meaning understood from a text may not be inherent in the text itself but resides in the background and prior knowledge of the reader (Chung, 1991).

In the case of OU, studies were focused on its university foundation courses, whose contents were more general in nature, thus allowing side by side comparisons of these courses using a readability formula to yield a fairly clear indication of which courses were easier or more difficult to read. However, when comparing between courses whose contents fall within more specialised ranges of texts, their readability or difficulty would not be as clear. For example, science and engineering courses might score poorly on readability tests due to the use of jargon and technical phrases, but the learning material may be relatively easy to understand for science and engineering students. Thus readability scores alone may not be a straightforward influencer of student performance and course attrition rate. It may also be possible for difficult to read courses to compare favourably with more general subjects in terms of students' performance and retention if their readability is pitched at the correct level to the right learners.

Notwithstanding the just stated limitation of readability formulas, this research shall defer to such a tool to determine the readability of its sample courses, specifically, the FRE test. This is because a readability formula is an efficient way to measure the readability of sets of texts and its estimates are relatively consistent with that which is obtained by a more complex measure (Klare, 1981). FRE is particularly suitable due to its original purpose as a test designed to assess the readability of adult educational material (Vieth, 1988). The choice of FRE is further influenced by its availability, as this method, along with two other readability score indices, comes as a standard electronic testing tool in the word processing software package used by OUM in its module development.

Methodology

To determine the readability of a module; sets of texts of 100 words each were randomly picked from the beginning, middle and end of a module; these three samples were tested with FRE; and the average score was used to indicate the readability level of that module. The Spearman rank order correlation was used to discover if there was any connection between readability and student performance.

Sample

Sample modules were electronic versions of printed modules taken from CIDT database based on lists provided by the various faculties of courses with high attrition rate, and combined with the list provided by Assessment and Examination Department of courses where students had scored highly in examinations of the semester that ended on December 2014. Additionally, the sample modules comprised editions that were the same as those used by learners during the semester when they took their exams. A combined total of 56 modules were provided by the faculties and the exam department. The selection of the printed modules was based on the following criteria:

- (i) English as the medium of instruction;
- (ii) 12 courses with low average exam marks and high attrition rates; and
- (iii) 12 courses with high average exam marks.

However, for reasons explained under "Limitations of the study", the actual number of modules assessed in this study was 18, comprising **11 low average exam mark** and **7 high average exam mark modules**.

Instruments

The FRE readability formula is one of the most popular tools used to test the readability of text. It is readily accessible due to its inclusion as an electronic testing tool in the word processing software used by OUM. When a set of text is run through the FRE test, it will return a figure from a scale that ranges from 0 to 100. A higher number indicates that the material is easier to comprehend. Table 1 below summarises the levels of readability as measured using FRE.

Table 1: FRE Indicators (Adapted from Castello, 2008)

Score	Readability Level	Education Level (in Malaysia) and/or Example of Publication
0 – 29	Very difficult	Postgraduate
30 – 49	Fairly difficult	Tertiary education; Harvard Law Review
50 – 59	Difficult	Form 4 – 6 (16 – 19 year-olds); Time magazine
60 – 69	Standard	Form 1 – 3 (13 – 15 year-olds); Reader's Digest
70 – 79	Fairly easy	Year 6 (12 year-olds)
80 – 89	Easy	Year 5 (11 year-olds)
90 – 100	Very easy	Year 4 (10 year-olds)

To study the relationship of readability of modules to student performance, we had chosen the online software tools provided by VassarStats, a website for statistical computation that is available at vassarstats.net.

Data Analysis

Table 2 below presents the list of 18 courses and the readability levels of their modules as indicated by the FRE scores. It also presents the mean exam scores of students taking the respective courses and using the related modules. All the modules scored between 58.7 and 28.1, a range that is within the reading proficiency of learners from 16 year-olds in secondary schooling to adults in university education.

Table 2: List of Courses, Module Readability Levels and Mean Exam Marks

Course	FRE Score	Mean Exam Score
(a) Management of Resource Centre	33.5	76.82
(b) Management of Innovation and Creativity in Education	38.3	75.58
(c) Hazard Management	46.8	75.71
(d) Action Research in Early Childhood Education	43.9	85.04
(e) Clinical Practice 14	36.3	80.66
(f) Clinical Practice 12	38.1	83.47
(g) Clinical Practice 1	43.3	83.25
(h) English for Science and Technical Purposes	58.7	60.21
(i) English for Workplace Communication	49.2	52.79
(j) Management and Medico Legal Studies B	37.5	45.68
(k) Industrial Hygiene	28.1	58.90
(l) Management Accounting	42.8	38.90
(m) Introductory Finance	49.0	47.64
(n) Basics of Financial Accounting	41.9	45.90
(o) Introduction to Multimedia Technology	28.4	50.92
(p) Environmental and Occupational Toxicology	32.8	66.37
(q) Operational Research	48.6	47.71
(r) Educational Psychology	42.6	45.45

The majority of the modules tested (14 out of 18) scored within the 30 to 49 range, which indicates a “fairly difficult” readability level or one that is suitable for readers in tertiary education. This shows that **most modules developed by OUM are aligned with the education level of the intended students**; i.e. those who study in colleges and universities. This result also indicates that these modules are written in the instructional or independent level, meaning that students could comprehend the modules by themselves and the modules are suitable for self-managed learning.

Relationship between Readability of Modules and Students’ Performance

The Spearman rank order correlation was used in analysing the relationship between the readability of the modules as indicated by FRE scores and the student’s performance in the related courses as indicated by the mean exam scores. FRE scores of the modules were ranked from the easiest to most difficult to read and understand, i.e. highest FRE score was ranked first. Meanwhile, the mean of students’ exam marks of each course was ranked from highest to lowest. Table 3 shows the FRE scores and exam marks of the courses, and the respective rankings.

Table 3: FRE Scores of Modules, Mean Exam Marks and Rankings

Course	FRE Scores of Modules		Mean of Students' Exam Marks	
	Raw Score	Rank	Raw Mark	Rank
(a)	33.5	15	76.82	5
(b)	38.3	11	75.58	7
(c)	46.8	5	75.71	6
(d)	43.9	6	85.04	1
(e)	36.3	14	80.66	4
(f)	38.1	12	83.47	2
(g)	43.3	7	83.25	3
(h)	58.7	1	60.21	9
(i)	49.2	2	52.79	11
(j)	37.5	13	45.68	16
(k)	28.1	18	58.90	10
(l)	42.8	8	38.90	18
(m)	49.0	3	47.64	14
(n)	41.9	10	45.90	15
(o)	28.4	17	50.92	12
(p)	32.8	16	66.37	8
(q)	48.6	4	47.71	13
(r)	42.6	9	45.45	17

VassarStats calculations returned the following values: $rs=-0.0898$, $df=16$, $p=0.72$. The Spearman correlation, though negative, was not significant at $p < .05$. Thus, it can be surmised that **readability of modules is not related to student performance**. This seems to suggest that the readability of the modules is not a significant factor that can affect students performance in the courses investigated.

Discussion and Implications

As mentioned earlier, the majority of OUM modules tested are written at levels that match their intended readers. Classified as “fairly difficult” to read based on their respective FRE level (tertiary education), these modules yielded a mixed set of exam marks, thus indicating no clearly observable correlation between readability and student performance. In another situation, the exam marks of students who took two “very difficult” to read modules, i.e. *Introduction to Multimedia Technology* and *Industrial Hygiene*, are ranked 10th and 12th respectively. This indicates that student performances in these courses are around the median rank of the 18 courses analysed but not among the worst performing. In a similar vein, the exam marks of students with the two most readable modules, i.e. *English for Science and Technical Purposes* and *English for Workplace Communication*, are not outstanding either as they ranked near the median at 9th and 11th respectively. Nevertheless, it should be noted that the four courses named here are among those that the faculties have indicated as having high attrition rates.

Students' prior knowledge is usually not factored into readability tests such as FRE. This is probably why the easiest and most difficult to read modules sampled have no discernible correlation to student performance. It is also possible that there is no causal relationship between readability and student attrition when even courses that have easy to read modules are among those that have high attrition rates. However, this finding is inconclusive as the sample size is not very large. Besides, other factors not related to readability such as the quality of services, cost of education and learners' personal commitment may also affect student attrition.

Nevertheless, based on the findings of this study, we can infer that readability is not an influential factor in affecting student performance in OUM. This is reflected in the findings that the two best student performances are in *Action Research in Early Childhood Education* and *Clinical Practice 12*, while the worst two student performances involves courses in *Management Accounting* and *Educational Psychology*; the modules of all these four courses fall within the level of readability that is appropriate to the targeted learners. Therefore, it is recommended that CIDT continue to focus on the aspects of content, language and instructional design in its drive for developing high quality modules.

Limitation of the Study

OUM courses use either English or Bahasa Malaysia as the medium of instruction. Some instruct students through study guides (which serve as brief synopses of what to read in recommended text books) instead of printed modules. As such, the number of offered courses that use English-based modules and the number of students enrolled in those courses can vary from semester to semester. This presents some complication in gathering accurate population data for any particular semester, including that for December 2014. Furthermore, the exam marks are used without adjustments for any bias that may be present due to differences in grading rubric for different courses.

For these reasons, the research team decided not to attempt to find sample sizes of students and modules that are large enough to make inferential statistical analysis for this study. Therefore, it must be stated here that the findings of this research are based on selective samples to yield insights that only provide guidelines for module development. With regards to the basis for selection of samples for this study, the unavailability of module books for some courses (only study guides) and the limited number of modules written in English, also resulted in the actual modules assessed being different from the numbers stated in the criteria.

Conclusion

To conclude, this study tested a selection of OUM modules and has determined they were written at readability levels appropriate for their intended learners, and that readability is not a significant influencer on student performance. Therefore, we can infer that readability is an aspect of quality that is already internalised into the quality assurance process at CIDT.

However, this study was limited by the use of selective sampling, a single testing tool in assessing specialised ranges of texts, and not accounting for any bias that may be present in the raw exam marks. As such, any future research undertaken along this line would benefit from the following recommendation:

- (a) Finding a larger and more representative sample size with regards to student population and number of modules examined;
- (b) Use of two or more readability formulae, e.g., FRE in conjunction with SMOG Grade and Gunning's Fog Index;

- (c) Devising a more suitable formula to assess the readability of specialised subjects and also to account for learners' prior knowledge; and
- (d) Normalisation of marks to ensure that the mean for all courses are equal.

Such undertaking would necessitate lengthier preparation time and more work in data gathering, preferably over the duration of two or more consecutive semesters. Doing this could potentially yield more accurate estimates, more variables to compare, and thus, lend more confidence into the analyses of the relationship between readability and student performance in OUM modules.

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ACTION RESEARCH FOR IMPROVING INSTITUTIONAL PRACTICE

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Abstract

This paper uncovers how an ODL institution incorporated several innovations into its current practices using the action research design. A number of small scale surveys carried out by the staff members (Lekamge & Jayathilake, 2002, Lekamge and Karnanayake, 2009) provided an insight into the route causes that hindered the successful implementation of the PGDE programme and M. Ed Programme. As solutions, three action research projects were designed and put into operation during the past six years targeting improvement of the rationality and justice of the faculty practices, understanding of the practices and the situations in which the practices have been carried out. Multi-methods were used to collect and analyze data relating to course teams, coordinators of the programmes, visiting academics, student teachers etc at different points of the intervention process. The results demonstrated that the intervention programmes had a direct impact on empowering faculty staff to develop a collaborative commitment to improve institutional practices, enhancing professional capacities of student teachers to become reflective practitioners in their school communities and upholding the qualitative nature of the programmes whilst improving their completion rates. The recommendations of the study were mainly based on how the intervention processes should be further improved to maximize the benefits to all stakeholders.

Key terms: Action Research, Practice, Innovations, Intervention

Introduction

The Faculty of Education of the Open University of Sri Lanka (OUSL) conducts professional training programmes for teachers, teacher educators and other officials working in the field of education through the distance mode. Most of these programmes are conducted in all three media with the support of regional, study and teaching centres established throughout the country. The Faculty relies heavily on a large number of visiting academics for the conduct of those programmes. Therefore, the Faculty faces a constant challenge in maintaining the quality of the programmes while responding to the increasing demands of the society. Further, those programmes need constant updating and improvements in order to incorporate recent pedagogical and technological advancements to their curricula and delivery methods. A number of small scale surveys carried out by the staff members (Lekamge & Jayathilake, 2002, Lekamge and Karnanayake, 2009) provided an insight into the route causes that hindered the successful implementation of the PGDE programme and M. Ed Programme. Therefore, the Faculty has adopted the action research approach to “improves practice, understanding of the practice and the situations in which the practice is located” (Carr and Kemmis, 1986, p 165). In this paper, three action research studies aimed at improving the quality of two study programmes namely the Post Graduate Diploma in Education and Master of Education have been presented.

Review of Literature

Action research is a process of systematic inquiry that enables people to find effective solutions to real problems encountered in daily life (Ferrance, 2000; Stringer, 2007). It has grown from the status of ‘a research tool’ (Sagor, 2000) through a ‘form of inquiry’ (Tripp, 2001; Mills, 2003) to a separate ‘scholarly paradigm’ of research (Young, Rapp & Murphy, 2010) during the last few decades. A variety of different terms such as action research, action learning, action inquiry, participatory action research, and collaborative action research and many interpretations have been used to explain it. Ferrance (2000) identified four basic themes emerged from all definitions of action research: empowerment of participants, collaboration through participation, acquisition of knowledge and social change. Within the action research orientation, five approaches blossomed to admit the most common forms of action research (Reason, 2003). Those approaches have been named as cooperative inquiry, participatory action research, action inquiry, appreciative inquiry and learning evaluation to address many variations in action research. The two fold ambition of developing practically relevant and scientifically sound knowledge requires the active collaboration of all stakeholders (Gilmore et al, 1986). The intensity levels of action research are decided by the interaction of researcher with the practitioners and the active involvement of the researcher with the research. Further, the level of interaction of the researcher as determined by “information, consultation, co-decision and co-production” (Huntjens and others, 2010) varies in line with the purpose of the study. The involvement of the researcher in an action research would take the forms of “observation, investigation, reflection, intervention and experimentation” (Huntjens and others, 2010). As explained by O’Brien (2001) action researchers has to play many different roles such as planner, leader, facilitator, designer, observer, teachers, listener etc. at different stages of action research.

There is numerous research conducted using different approaches of action research to implement solutions to the existing problems in different programmes of study. Sankaran and Kumar (2006) used action learning and action science approaches to conduct two doctoral studies in India and Singapore. One was carried out to prepare the engineering division of a Japanese multinational company to expand capabilities to carry out its projects by making large scale changes in the structure and processes. The other project was carried out in a large Indian bureaucracy to introduce total quality management in one part of the organization. Both studies concluded that action research proved to be an effective and responsive methodology to implement organizational change. Hansen and Borden (2003) explained how action research could be used to support academic programme development by illustrating two examples from Indiana University. The first one focused on introducing a new student orientation programme and evaluating the extent to which orientation was affecting on new students knowledge levels, attitudes and behaviors. The second study used action research approach to improve campus climate for diversity. Willcuts (2009) reported a study aimed at exploring the experience of middle school science teachers in a three year partnership programme including the impact of the programme on their professional development and to improve the programme by developing a set of recommendations on the study findings. The final conclusion was that “it is that fashion that will propel me forward in my journey to uncover new understanding of professional development design using partnership as a venue and action research as a methodology” (2009: 77). The above theoretical view points as well as the empirical studies have broaden the understanding of the researcher on the application of action research design for solving problems related to the selected programmes.

Methodology

The three studies conducted to introduce solutions to the problems in the two programmes used the action research design. As explained by Kemmis and McTaggart (1992) action research is suitable to research our own work, to help to improve what we do, including how we work with and for others. In other words, action research is done by us (professionals) to improve our practice, our understanding of the practice and the situations in which the practices are carried out (Zeni, 1999). Further, three research teams implemented the three studies using the **‘collaborative action research approach’**. It “strengthens the opportunities for the results of research on practice to feed back to the systems in a more substantial and critical way. It has the advantage of encouraging teachers to share common problems and work cooperatively as a research community to examine their existing assumptions, values and beliefs within the socio-political culture of the institutions within they work. Policies and practices within the organization are more likely to be opened up to change when such changes are brought about through group processes and collective pressures” (Burns, 1999, p 13).

The three research teams applied the **‘second-person action research’** level (Reason in Henry 2001, p 185) in order to address the issues of mutual concern and to facilitate the collaboration and cooperation among team members there by developing a learning community within the institution. Conceptual frameworks had been developed by the research teams illustrating the existing situation in each case, intervention procedures adopted and the expected outcomes from the study. To complete the research cycles of the last two action research studies more than two years had been spent by the team of researchers. The first action research reported underneath is still continuing with the third batch of students in a very successful manner. All the new procedures adopted by the teams had undergone continuous evaluations throughout the action research period and the findings were presented to the Faculty at different fora.

Figure 1: The Conceptual Frameworks of the Three Action Research Studies

Existing Situation	Intervention Programme	Expected Outcomes
(1) An action research to improve the completion of the Dissertations by students in the Master of Education Programme (2011-2014)		
Non-completion of dissertations due to lack of motivation, Lack of commitment and limited understanding of students Problems with academic writing skills Limited supervision Low motivation of supervisors Untrained supervisors Unavailability of leave to complete dissertations Work commitments of students	Implement procedures to increase motivation and commitment of students Conduct workshops for students to improve their understanding on different aspects & writing abilities and other aspects of the dissertation Conduct workshops for supervisors to improve close supervision Self-reflective diaries maintained by students Set targets for students and supervisors Discussions with authorities to make arrangements for leave	Increased motivation and commitment of students Improved student attendance in day schools Student knowledge, understanding and writing skills improved Attitudes of supervisors changed Supervision strengthened Completion rate of assignments improved

(2) An Action Research aimed at Improving Quality of Marking of Assignment in the Post Graduate Diploma in Education Programme (2010-2013)		
<p>Low quality of set assignments Quality of marking is poor No constructive comments on assignments. No personalized comments on assignments High turn-round time of assignments Lack of monitoring of marking of assignments Illegal procedures adopted by students for submission of assignments (copying etc)</p>	<p>Participatory (course team) approach for setting assignments Training workshops for marking examiners to practice their roles Conference marking sessions Introduction of overall comment sheet Appointment of assignment/centre co-ordinators and continuous monitoring of marking of assignments by assignment coordinators Preparation of detailed guidelines for Activity based Assignment Day Schools Conduct of Activity –based Assignments Day Schools to reduce illegal procedures and expedite student feedback</p>	<p>Quality improvement of set assignments Increased awareness about marking examiners' roles Relationship improved between grades and comments in assignments Constructive comments on assignments Quality of marking improved Personalized reports produced by Assignment co-ordinators on marking examiners Distribution and collection of assignments streamlined</p>
(3) An Action Research on the Quality Improvement of Teaching Practice of the Post Graduate Diploma in Education Programme (2010-2012)		
<p>1st Cycle Lack of awareness of the faculty staff about the real problems No mechanism to support student teachers in schools No mechanism to improve participation of student teachers in the extra-curricular activities</p> <p>2nd Cycle Low quality teaching skills of student teachers enrolled in PGDE Lack of commitment and motivation of students towards TP component</p> <p>3rd cycle Lack of continuous monitoring of the evaluation of TP process Lack of collaboration among Faculty staff</p>	<p>1st cycle Brain storming sessions to increase awareness of staff members Two interactive workshops to analyses the problems and identify suitable solutions Team work on developing necessary material and other documents</p> <p>2nd cycle Appointment of school mentors at school level and introduction of the project Training of school mentors on roles and implementation of the project Distribution of mentors' manual/ project manual</p> <p>3rd cycle Appointment of co-ordinators to centres Monitoring workshops with students Introduction of self-evaluations on the support received from mentors and master teachers Continuous monitoring of the activities by team members</p>	<p>1st cycle Increased awareness and attitudinal changes of staff Mentoring mechanism and school based project introduced Required material developed</p> <p>2nd cycle Commitment and positive attitude of PGDE students towards TP component A supportive culture developed in the schools for student teachers</p> <p>3rd cycle Effective and efficient implementation of the two mechanisms Teaching Practice process is streamlined</p>

Multiple methods had been used in these studies for collecting data which facilitated the triangulation of methods and data. Further, prior to the implementation of interventions, three base-line surveys had been carried out using questionnaires and documentary analysis to uncover the main problems, their intensity and the factors leading to such problems. Data collection instruments developed by the team members were piloted with a small number of student teachers/visiting academics and necessary revisions were done before using them with the main sample. The three interventions had a number of research cycles and each cycle included four steps namely planning, action, observation and reflection.

The main objective of the three research studies was to introduce innovative changes as solutions to the existing problems in the M. Ed programme and PGDE programme. The objectives, data collection methods and the main findings of the three action research studies are given below in brief.

1. An action research to improve the completion of the Dissertations by students in the Master of Education Programme (2011-2014)

Main objectives of the study

- To develop and implement an intervention programme to improve the completion of dissertations of the M. Ed Programme.
- To evaluate the effectiveness of the intervention programme at different points of times identified throughout the conduct of the research study.
- To make suggestions for further improvement of the intervention programme and the sustainability of the new procedures implemented.

Sample of the Study – 243 studentteachers, 12 Supervisors

Data Collection Methods

- Student feedback at different points
- Interview schedule for students
- Questionnaire for Supervisors
- Self-reflective journals maintained by students
- Comments made by the supervisors on the proposal and different chapters of dissertations
- Progress review forms completed by supervisors and meeting held at different points

Main Findings of the Study

- Sending letters to remind academic activities planned for them and giving telephone calls to check their progress had improved the relationship between students and the Faculty. Participation of students in face-to face sessions could be further improved by making attendance compulsory in those sessions and arranging meetings with supervisors on the same day at the Faculty. As the students were coming from all around the country they were able to get the maximum benefit by coming to the Faculty on these days.
- Through student reflective diaries, it could be revealed that the lecture discussions and workshops had helped students to improve their understanding on research methodology and research skills needed to complete their dissertations.

- The research team maintained a continuous dialogue with supervisors with a view to provide continuous guidance for students to solve their problems and to develop their confidence and skills in supervising students. They were encouraged to maintain close contact with students and to provide advice and guidance according to the needs of students. Further, using progress review forms, the research team was able to keep track of the progress of their students.
- Another procedure which had been successful throughout was setting targets for students and supervisors. Students had submitted the proposal for their research study, first three chapters and fourth and fifth chapters in draft form as the three assignments for which the supervisors were requested to give immediate feedback. Supervisors were given remuneration for the completion of those tasks on time.
- The final but an outstanding result of the study was that nearly 35 students had completed their dissertations in 2012 and 25 students in 2013. This was a very substantial progress when compared with the number of students (3-7) who completed dissertations in the previous academic years.
- Having continuous discussions within the research team to plan, implement and sometimes change the research process and to review progress of the interventions helped in developing a close congruence relationship among staff members and a research culture in the Faculty.

2. An Action Research aimed at Improving Quality of Marking of Assignment in the PGDE Programme (2010-2012)

- To develop and implement an intervention programme to improve the quality of marking of assignment in the PGDE programme
- To assess the effectiveness of the intervention implemented
- To make recommendations to improve the intervention programme

Sample of the study – 290 student teachers, 104 marking examiners, 9 Centre co-ordinators and assignments marked by examiners

Data Collection Methods

- Questionnaire for students
- Questionnaire for Marking examiners
- Observation schedule to assess marked assignments
- Observation schedule to assess Activity –based Assignment Day Schools
- Feedback form on training programmes
- In-depth interviews with marking examiners
- Focus group discussions among team members
- Reports of Assignment/ Centre co-ordinators

Main Findings of the Study

Impact of the intervention programme on improving quality of marking assignments

The course teams who had been practicing the participatory approach could improve the quality of assignments set, marking schemes prepared and the guidelines developed for the conduct of day schools. However, the analysis of assignments used for the last two years (2011/12 and 2013/14) in relation to three subjects of the programme had revealed some drawbacks in the format, practical nature, cognitive levels, novelty and challenging nature of assignments which could have been avoided by using the course team approach.

Evaluations of the training workshops had clearly shown that the strategies used at the workshops for training marking examiners were highly effective. Both experienced and novice marking examiners informed that they were able to know more about marking of assignments and their roles by participating in the workshops. Before conducting the intervention, the majority of marking examiners had given prominence to the role of assessor. Having discussed the other two roles to be performed by them they were convinced that the role of facilitator and role communicator should also be given prominence by the marking examiner.

Having discussions on different ways of writing comments in relation to different roles of marking examiners and providing opportunities to practice in writing constructive comments, two-way communication between marking examiners and student teachers could be improved. The relationship between grades and comments also was substantially increased when the quality of comments had been enriched. The overall comment sheet helped them to organize the comments in assignments in a meaningful manner and to communicate clearly their views on the completed assignments.

Through the observations of marked assignments and group discussions planned at workshops on marking and grading assignments, the areas where discrepancies existed among marking examiners had been identified and several measures such as conference marking and continuous monitoring of marking had been implemented to minimize them.

According to the majority of visiting academics ABADS were useful, powerful, effective, motivating, relevant and more practical (Table 3). Further, during ABADS the preparation of student teachers (9) and close interaction within the groups (4) were high which could be identified as the indirect achievements of such day schools. It was interesting to note that the student teachers also put forwarded the same view points (Table 5) about the ABADS.

However, the direct observations conducted by the research team on ABADS had revealed some drawbacks in the way that ABADS are conducted by the visiting academics.

Appointment of Centre/Assignment coordinators also helped the Faculty to streamline the distribution of assignments among marking examiners, monitoring marking and sending the marked assignments back to marked assignments. Co-ordinators were instructed to distribute a manageable number of assignments among examiners and submit reports on each marking examiner after observing 5% of assignments marked by each examiner in a centre.

3. An action research on the Quality Improvement of Teaching Practice of the PGDE Programme (2010-2012)

- To design and implement a School Mentoring mechanism and a school based project to improve the quality of Teaching Practice.
- To assess the impact of the two strategies on the student teachers, school and Faculty of Education.
- To evaluate the effectiveness of two strategies on improving quality of Teaching Practice Teaching Practice.
- To identify the specific problems faced by student teachers, school Mentors, Master Teachers and Faculty staff in the process of implementing the two strategies .
- To suggest ways and means for effective implementation of the two strategies.

Sample of the study- 165 student teachers and their school mentors, 350 master teachers and 15 visiting academics of the PGDE pogramme.

Data Collection Methods

- Focus group discussions with internal and academic staff memebrs
- Self-evaluations of student teachers before and after Teaching Practice
- Mentors' and students' reflective journals,
- Mentors' evaluation report I (before starting teaching practice (TP)) and II (after finishing TP)
- Mentors' project evaluation reports.
- Interviews with a selected group of school principals, mentors and student teachers

Main Findings of the Study

The impact of the mentoring mechanism: The mentoring mechanism had brought about a positive change in two personality characteristics of student teachers namely 'punctuality' and 'commitment to teaching'. In line with the professional skills of student teachers, 'participation in co-curricular activities' and 'contribution to school administration' had been improved substantially after intervention. The most popular strategies among school mentors used for development of personality characteristics and professional skills of student teachers were 'advising' and 'providing opportunities'.

The majority of school mentors had tried their best to fulfill their roles and responsibilities with regard to the completion of school-based projects. They provided guidance to identify suitable problems, develop proposals and to get the support from school community to implement the projects. Further, it was evident that School Mentors had eased the problems of student teachers in planning lessons, preparing teaching aids, using different teaching techniques and maintaining the classroom management in an effective manner. Thus it could be concluded that school mentors had provided a conducive and friendly environment within the school to facilitate professional development of student teachers.

The impact of school based projects: Developing the physical environment of the school, improving school management and teaching learning process, improving students' reading, writing and numerical skills, making adjustments to environment to suit learning situations of students were the most popular themes selected for the school-based projects by student teachers. The majority of student teachers had used students, other staff members, principals and parents for completion of their school based projects. A very few student teachers were lucky enough to get the assistance from members of the school development society, well-wishers, zonal/divisional educational authorities and other government institutions. Thus it could be concluded that student teachers had used available human resources up to the maximum for the completion of their projects.

The data supported that student teachers have developed various skills through project planning and implementation and both schools and the school communities have been benefited through school-based projects completed by student teachers. Short-term solutions to issues in the classroom setting and school setting, improving student achievement levels and school environment, enhancement of student capabilities, development of positive attitudes towards teaching and learning, maximum utilization of resources available in schools and interaction with the outside community were some of the benefits mentioned by them.

Impact on improving quality of Teaching Practice Stage I: It has been proven that the school mentoring mechanism and school-based projects had a positive impact on student teachers. Further, there was clear evidence to support that the advice and support given by master teachers and school mentors had a positive impact on the development of professional skills of student teachers. The triangulation of student teachers' perceptions, master teachers' evaluations and school mentors' reports had further confirmed the improvement experienced by student teachers in planning and teaching skills and in personality characteristics. Therefore, it could be concluded that both school mentoring mechanism and school-based projects have a positive impact on improving quality of student teachers. However, there were certain weaknesses identified by some master teachers for which they themselves had made suggestions for improvement.

The close continuous collaboration prevailed among school mentors and student teachers, student teachers and their students and colleagues, student teachers and the school community provides clear evidence for the quality improvement of the teaching practice.

Overall Conclusions

These research studies had paved the way for the Faculty to maintain a close relationship with the teachers, principals and other officers in the school system. Establishing an atmosphere of trust and on-going open communication had decreased the student teachers and other stakeholders feeling of uncertainty. Further, this atmosphere had facilitated the completion of tasks of student teachers relating to programmes in a satisfactory manner. On the other hand, the faculty itself had been benefited through identification of more dedicated and competent external staff members from the school system and from other educational institutions to work in a collaborative manner with the Faculty staff.

Through these action research projects it was possible to maintain a very cooperative and collaborative atmosphere within the Faculty which led to improve the unity and harmony among staff members. The participatory process was educative, empowering, involving a dynamic approach, in which problem identification, planning, action and evaluations were interlinked (Waterman et al, 2001: 4). The decisions made about the direction of research and the possible outcomes were collective. Researchers were explicit about the nature of the research process and equal access to information gathered. The continuous dialogues and discussions held among the research team members helped in improving the knowledge, skills and attitudes of young academics there by developing a research culture within the Faculty. Further, the self-confidence, motivation and commitment of young staff members have been improved through the opportunities for interacting with more senior staff members in the teams. Thus, all the members were positive about the impact of the interventions and ready to face any unforeseen challenges as teams which may come across during initial implementations of interventions.

The quality improvement of marking of assignments, completion of dissertations and development of guidelines for school mentors and mentees could be considered as remarkable achievements of the three research projects. This situation supported Stringer view (2005, 4) that the action researchers are engaged in a careful diligent inquiry not for the purpose of new facts or discovering revising accepted laws or theories but to acquire information having practical application to the solutions to the specific problems related to their work.

The collaborative action research processes had strengthen the opportunities for the results on practice to fed back into educational systems in a more substantial and critical way (Burns, 1999, p 13) Finally it could be concluded that action research process has become a more interactive, meaningful and practical process for facilitating faculty development and transformation.

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PROFILING INFORMATION SEEKING BEHAVIOR OF DISTANCE LEARNING STUDENTS IN WAWASAN OPEN UNIVERSITY

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Abstract

In today's rapidly developing learning environment, technology has emerged as a strong contender in distance learning especially in the areas of information seeking behavior. The enormous availability of information on the Internet and library databases necessitates distance learning students to prepare themselves with skills to search relevant information for their research and learning activities. This was and is still a growing concern among adult students considering their limited time and, work and family commitments, and hence the library must also continuously improve their services to accommodate the needs of the students. In light of this, Wawasan Open University Library has undertaken a survey study, based on the Wilson's revised model of information behavior (1999), to profile the information seeking behavior of their distance students in using library resources in their research and learning activities. Using the stratified random sampling method, samples were selected to ensure proper representation of the population across 4 Schools of Studies and 5 Regional Centres. A total of 550 questionnaires were sent to undergraduate and postgraduate students and 435 completed questionnaires were returned with a success of 79% response rate. Findings of the study provide useful information on improving students' information search behavior as well as the utilization and efficiency of library services.

Keywords: *Information needs, information seeking behavior, Wilson model of information behavior, distance learning, Wawasan Open University*

Introduction

The emergence and development of technology-aided distance education is a relatively new approach in the Malaysian educational landscape. With recent exponential technological development in educational practices, a growing number of institutions have attempted to service distance education programmes via various modes; some favoring more face-to-face contact hours while others take a liking for engagement in the online learning environment. Regardless on these modes of delivery, what is certain is the need for students to be technologically literate for them to successfully savor the University learning experience.

Wawasan Open University offered the first suite of 11 programmes in 2007 and is now offering a suite of 47 programmes. Wawasan Open University is one of the three full-fledged distance learning institutions in Malaysia that delivers distance learning programmes with a heavier focus on engagement in online learning environment. While this mode is not uncommon in many of the full-fledged and recognized distance learning institutions such as IGNOU and Athabasca University, it is imperative to pay consideration to the competency of students in engaging and interacting in the online learning environment, particularly the process of information search and effectively utilizing the said information for learning and research work.

This responsibility is shouldered by the Tun Dr Lim Chong Eu Library of Wawasan Open University, which adheres to the Guidelines for Distance Learning Library Services: *“Members of the distance learning community, including those with disabilities, must therefore be provided effective and appropriate library services and resources, which may differ from, but must be equivalent to those provided for students and faculty in traditional campus settings”* (Distance Learning Section Guidelines Committee, 2004, p.607). Based on this philosophy on the Bill of Rights for the Distance Learning Community, the *Standard for Access for Achievement of Superior Academic Skills* requires the Library of distance learning institutions, despite circumstances of geographical distance, limited face-to-face contact hours and other aspects relevant to the provisions of distance learning, to provide services and resources equivalent to conventional institutions (American Library Association, 2008). This is a standard of practice for Library Services that is often undervalued in some distance learning institutions, which ultimately leads to the common perception that the Library is no more than an avenue for a collection of books and resources; which is certainly not the case!

The ensuing discussion attempts to highlight the significant role of the Library in distance learning institutions, specifically by investigating the profiling of information seeking behavior of distance learners in Wawasan Open University.

Information Seeking Behavior and Its Role in the Scholarship of Learning and Research

Information seeking behavior refers to the process of seeking, collecting, analyzing and utilizing information in a meaningful manner (Bystrom & Hansen, 2005), and this is an iterative process until the user acquires the intended information. Figure 1 illustrates Wilson’s (1999) information seeking model that is commonly used in demonstrating the steps in information seeking behavior. Wilson (1999, p.249) describes information seeking as “activities a person may engage in when identifying their own needs for information, searching for such information in any way, and using or transferring that information.” In the context of the study, this description of information seeking behavior translates into distance learners’ active and purposeful information seeking that result from the need to complete course assignments, preparation for tutorial discussion, engagement in workshops and engagement in research work.

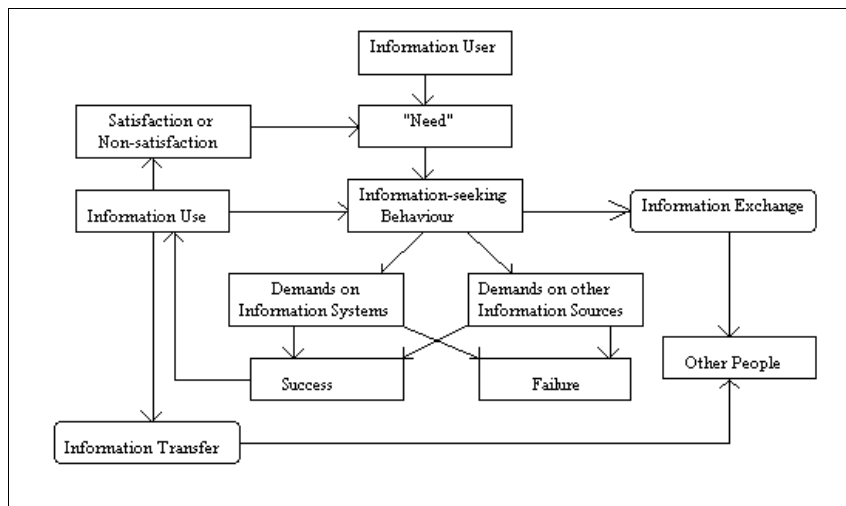


Figure 1: Wilson's information behavior model

While information seeking can be achieved without (physical collection of resources) or with (digital collection of resources) computing assistance, the latter is becoming more significantly associated with the Internet and ubiquitous computing. For instance, there is this growing social aspect of information seeking that Shah, Capra and Hansen (2014, p. 23) elucidate as “current work [information seeking] coincides with a combination of new technologies, such as Web 2.0 and social media/networking tools, and changes in human behavior, including people’s increasing tendency to quickly and ubiquitously share and connect with others through new interfaces and devices.” They further argued that it is this confluence of modes of seeking and sharing information that sparked the need to better comprehend information seeking behavior in this changing trend of technological development. Although a substantial body of literature exists expounding on both theoretical and empirical findings on profiling information seeking behavior in a variety of contexts, still there is an enduring concern in observing such behaviors that correlate with the changing online environment in distance education – and this begs the question “*What are some of the challenges that distance learners face in information search and information utilization in the age of Internet data mining?*”

Looking across both dimensions of emerging technological developments and expansion of distance education, it becomes clear that information seeking behavior is an individualistic process, and invariably, the information needs for every individual is different depending on the necessities for learning and research work. Recognizing this key importance, the mandate falls onto the Library to cultivate effective information seeking behavior among students, and this measure has initiated the Library to take a shift into acknowledging the presence of increasingly complex information systems; among others, online repositories, e-resources, and electronic information sources (Devi & Dlamini, 2014; Head, 2013; Kadli & Kumbar, 2013; Kumar, 2013). In view of the aforementioned, the ensuing discussion attempts to study information seeking behavior of distance learners in Wawasan Open University, one of the premier distance learning institutions in Malaysia.

Research Objectives

The primary aim of this study was to explore and profile information seeking behavior among distance learning students in Wawasan Open University. In the context of this study, information seeking behavior refers to both the process of information search as well as effective utilization of information obtained from the information search process.

The following objectives were developed, based on relevant literature governing information seeking behavior in distance learning, to guide the direction of the study:

1. Identify the problems faced in information search among distance learning students in Wawasan Open University.
2. Identify the problems faced in effective utilization of information among distance learning students in Wawasan Open University.
3. Examine the relationship between problems faced in information search and effective utilization of information.

Methodology

This study adopted the survey research design for several reasons. First, the survey research allowed the researchers to obtain the students' perceptions and practice in seeking information and utilizing the said information for learning and research activities across the different Schools, i.e., School of Business Administration (SBA), School of Science and Technology (SST), School of Foundation and Liberal Studies (SFLS) and School of Education, Languages and Communications (SELC). Second, this measure was particularly important considering the University has Regional Centres in 5 different states, namely, Kuala Lumpur, Penang, Ipoh, Johor Bahru and Kuching. These Regional Centres act as a student recruitment centre, and they provide the provisions of tutorial rooms, libraries and other relevant academic and operational facilities. Finally, this survey measure allowed for quantitative analysis that highlights statistical significance for relevant extrapolation of research findings, especially in the area of information management in distance learning.

The population of the study involved distance learners from the 5 Regional Centres that provides courses serviced by the 4 Schools. At this juncture, it must be noted that this is a preliminary study executed in relation to a larger funded research that also attempts to study information seeking behavior of distance learners in Wawasan Open University. This preliminary study aims to gauge the challenges faced in survey administration among distance learners in the University. One of the major challenges faced in gathering data in distance learning institutions was chances of low response rate due to the nature of distance learning mode. In the context of this study, tutorial attendance is optional and hence no obligatory measures are taken on the more commonly practice of 80% attendance rate in conventional universities.

With advice sought from the respective Regional Centres on active average attendance rate for the tutorial weekends, a total of 550 questionnaires were couriered to the respective Regional Centres to be administered accordingly to the tutorial classes identified by the researchers. In the sampling process, emphasis was also placed on avoiding data duplicates from students who attend both the first and second tutorial weekends. This particular emphasis on data duplication also drew attention to the fact that response to the administered survey was not course-dependent, but should focus on their (student's) overall information seeking behavior. Relevant concerns were highlighted to the staff at the respective Regional Centres that assisted in the administration of the survey. Clear instructions were given and students were assured on the anonymity of their response to the survey instrument. The survey instrument was developed based on literature governing information seeking behavior among distance learners (Liu & Zheng, 2004) and completed with the researchers' experience in the field.

Results and Findings

Findings of the study drew attention to statistical data imperative to profiling information seeking behavior among distance learners in Wawasan Open University. Findings of this study also bear importance to distance learners in other distance learning institutions that share similar parameters to Wawasan Open University.

From the total of 550 questionnaires administered, a total of 435 completed questionnaires were returned accounting for a success response rate of 79%. Table 1 presents the demographic findings of the respondents.

Table 1: Demographic Findings

Variable	Frequency	Percentage
Gender		
Male	188	43.2%
Female	247	56.8%
Age		
21-29 years	224	51.5%
30-39 years	130	29.9%
40-49 years	63	14.5%
Above 50 years	18	4.1%
Student Status		
Undergraduate	334	76.8%
Postgraduate	101	23.2%
Year of Study		
One year	145	33.3%
Above one year	290	66.7%

Table 1 presents the demographic findings of the 435 respondents. Based on the figures presented, 43.2% (n = 188) of the respondents were male students whereas 56.8% (n = 247) were female students. Almost half (51.5%, n = 224) of the respondents were between the ages of 21-29 while 30% of the respondents (n = 130) were in the ages of 30-39. The remaining respondents are ages 40–49 and above 50 years respectively. For the student status, a vast majority (76.8%, n = 334) of the respondents were undergraduate student whereas (23.2%, n = 101) of them were postgraduate students. Also, the majority (66.7%, n = 290) of the respondents had more than one year of learning experience.

In the ensuing discussion, findings of the study are presented in accordance to the research objectives of the study to facilitate comprehension.

Research Objective 1: Identify the problems faced in information search among distance learning students in Wawasan Open University

There were 7 major problems that distance learners experience in their information seeking process. Figure 2 illustrates the problems faced by distance learners in their information seeking process. The most significant problem they face is the inability to determine the appropriateness of the information they obtained (22%). While this is not an uncommon concern among distance learners, findings do seem to imply that this particular problem leads to other relevant problems, mainly, not being able to locate information (19%) and considering that information are outdated (14%). The other concern that

must be noted in this finding is how distance learners are not aware that relevant information is available in the library, whether in the form of hard copies or digital copies (12%).

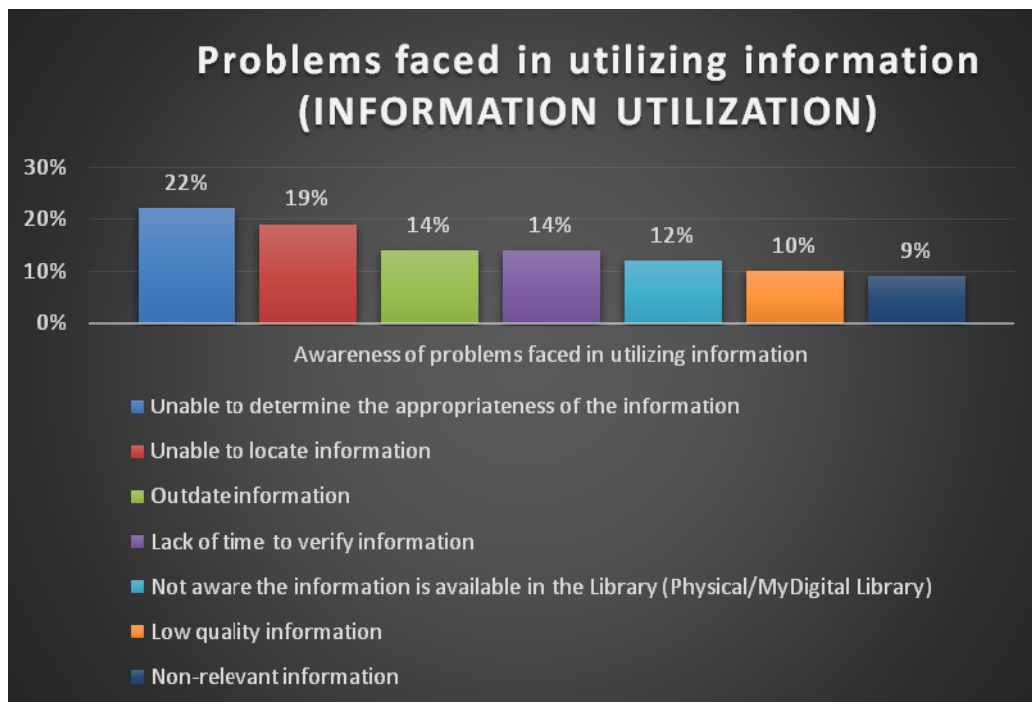


Figure 2: Problems faced by distance learners in their information seeking process

Given the vested interest in profiling information seeking behavior of distance learners, further analysis was conducted to examine their awareness of searching for information using the provisions of both MyDigital Library database and Internet search engines. Referring to Figure 3, descriptive results clearly indicate that students, in their scholarly learning and research work, require guidance in searching for information using MyDigital Library database and Internet search engines such as Google and Yahoo.

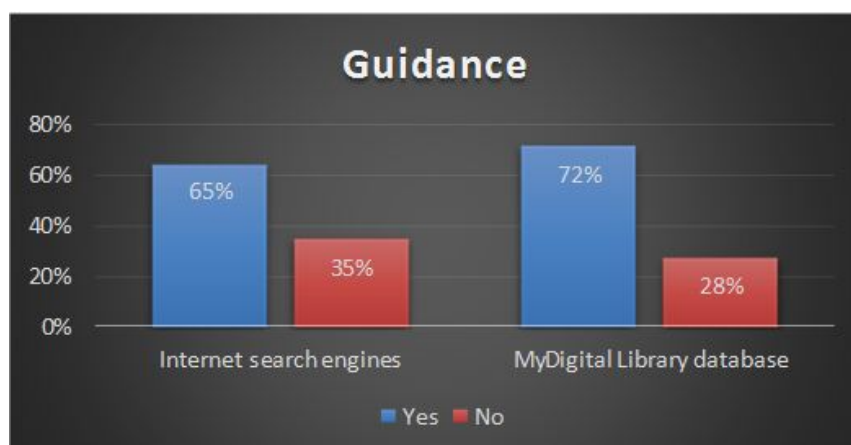


Figure 3: Percentage of respondents who required guidance with online information search

An independent sample t-test was used to statistically compare differences between undergraduate and postgraduate students in using digital library as their major source of information search in their learning and research work. Referring to Table 2, the results indicate that there exist a significant difference ($t = 3.415$, $p < 0.01$) in the scores between undergraduate students ($M = .20$, $SD = .403$) and postgraduate students ($M = .39$, $SD = .489$) in using MyDigital Library. Results also indicate a significant difference ($t = 3.234$, $p < 0.01$) in the scores between undergraduate students ($M = .18$, $SD = .271$) and postgraduate students ($M = .29$, $SD = .326$) in using the Physical Library.

Table 2: Student Status findings on MyDigital Library and Physical Library

Dependent Variable (Y)	Independent Variable (X)	n	Mean	Standard Deviation	Standard Error Mean	t	Sig
MyDigital Library	<i>Student Status</i>						
	Undergraduate	334	.20	.403	.022	3.415	.001**
	Postgraduate	101	.39	.489	.049		
Physical library	<i>Student Status</i>						
	Undergraduate	334	.18	.271	.0149	3.234	.001**
	Postgraduate	101	.29	.326	.0325		

** $p < 0.01$

While the results did not reveal any significant differences between undergraduate and postgraduate students in using Internet search engines for their learning and research work, results did indicate significant differences ($t = 2.097$, $p < 0.05$) between first year students ($M = .81$, $SD = .396$) and post-first year students ($M = .89$, $SD = .318$) in using Internet search engines. In other words, post-first year students are more likely to refer to Internet search engines for information compared to the first year students.

Table 3: Year of Study Findings on Internet Search Engines

Dependent Variable (Y)	Independent Variable (X)	N	Mean	Standard Deviation	Standard Error Mean	t	Sig
Internet search engines	<i>Year of Study</i>						
	First year	145	.81	.396	.033	2.097	0.05*
	Post-First year	290	.89	.318	.019		

* $p < 0.05$

Research Objective 2: Identify the problems faced in effective utilization of information among distance learners in Wawasan Open University

There were 8 major problems that distance learners experienced in effectively utilizing information they obtained from the information search process. Refer to Figure 4.

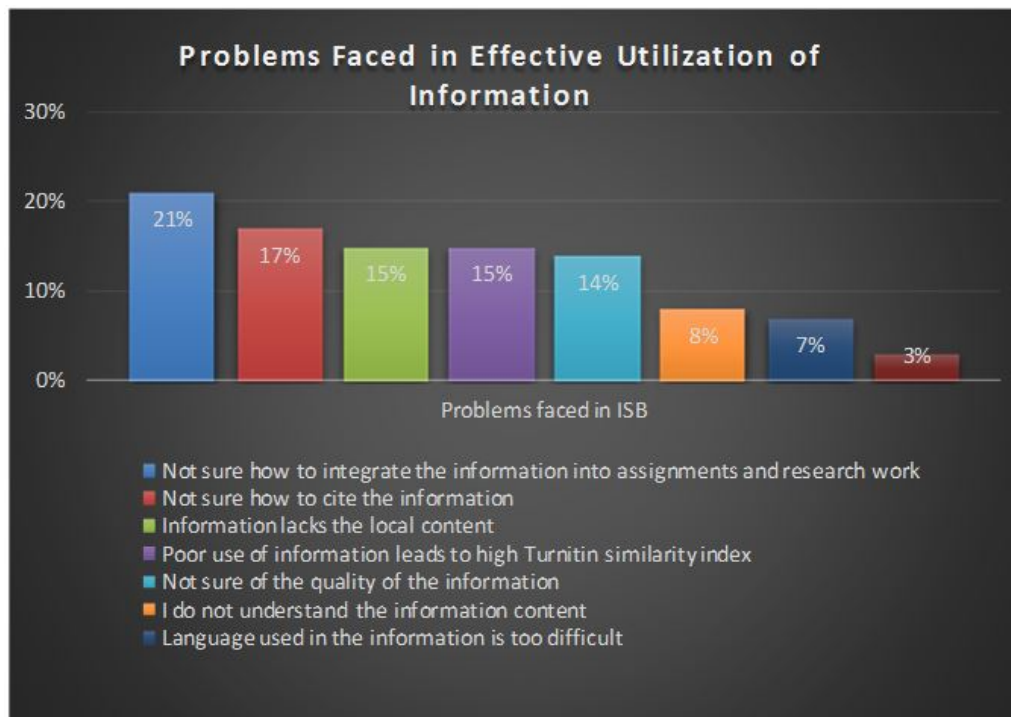


Figure 4: Problems faced in effective utilization of information

The critical concern here is that distance learners were uncertain on how to integrate information into their assignments and research work (21%). This is closely followed with the uncertainty on how to cite information (17%), lack of local context in the information (15%), poor use of information leads to high Turnitin similarity index (15%) and uncertain over the quality of information obtained (14%). Poor employment of these essential skills will surely impede any distance learner from progressing in the scholarship of learning and research. Further inferential analysis on these results revealed some interesting findings that necessitate relevant stakeholders, Library Support and Academics among others, to provide informative support in the relevant areas of concern. Referring to Table 1, an independent sample t-test was used to statistically compare differences between undergraduate and postgraduate students in their understanding of information content. Results revealed that there exist a significant difference ($t = 2.364$, $p < 0.05$) in the scores between undergraduate students ($M = .16$, $SD = .366$) and postgraduate students ($M = .08$, $SD = .271$). In other words, undergraduate students face more problems in understanding the content of the information they obtained compared to postgraduate students.

Table 3: Student Status Findings on Comprehension of Information Content

Dependent Variable (Y)	Independent Variable (X)	n	Mean	Standard Deviation	Standard Error Mean	t	Sig
I do not understand the information content	Undergraduate	334	.16	.366	.020	2.364	.001**
	Postgraduate	101	.08	.271	.027		

** $p < 0.01$

In addition, independent sample t-test was used to statistically compare differences between year of study (First year versus Post-First year) in their understanding of the language used in the information. Results revealed that there exists a significant difference ($t = 1.702$, $p < 0.05$) in the scores for first year student ($M = .17$, $SD = .379$) and post-first year students ($M = .11$, $SD = .314$). Significant differences ($t = 2.017$, $p < 0.05$) in mean was also obtained for first year ($M = .37$, $SD = .483$) and post-first year students ($M = .27$, $SD = .444$) in properly citing information they obtained from the search process.

Table 5: Year of Study Findings on Language Used and Citation of Information

Dependent Variable (Y)	Independent Variable (X)	n	Mean	Standard Deviation	Standard Error Mean	t	Sig
Language used in the information is too difficult	<i>Year of Study</i> First year Post-First year	145 290	.17 .11	.379 .314	.031 .018	1.702	0.05*
Not sure on how to cite the information	<i>Year of Study</i> First year Post-First year	145 290	.37 .27	.483 .444	.040 .026	2.017	0.05*

* $p < 0.05$

Research Objective 3: Examine the relationship between problems faced in information search and effective utilization of information

A simple linear regression analysis was used to examine the relationship between problems faced in information search process and effective utilization of information. A positive correlation was found between both variables ($\beta = .565$, $p < 0.001$). The results indicate that problems faced in information search process significantly predicts effective utilization of information with 32% prediction of the variance [$F(1,433) = 202.619$, $p < 0.01$].

Table 6: Findings of regression analysis

Independent variable (X) Effective utilization of information		
Dependent variable (Y) Problems faced in information search		
R square	Beta	F
.319	.565**	202.619

Discussion and Implications

The aim of this study was to explore and profile information seeking behavior among distance learners in Wawasan Open University. The operational definition of information seeking behavior refers to both the process of information search as well as effective utilization of information obtained from the information search process. Directed by this aim, specific objectives included identifying the problems faced in the information search process, problems faced in effective utilization of information, and finally examining the relationship between these two factors.

Several implications were drawn from the findings of the study which address significant importance to the understanding of information search behavior of distance learners in Wawasan Open University. These implications also possess the potential to be extrapolated to other context of information seeking behavior of distance learners that shares similar parameters with this study. Findings of the study provide statistical evidence to the convictions that distance learners are not familiar with information seeking processes and the subsequent process of effective utilization of information. In addition, findings have also revealed that unfamiliarity with information search process mostly affects either undergraduate learners or first year distance learners.

While this finding may have been somewhat anticipated, what is enlightening is that poor information search behavior can lead to distance learners to develop a sense of isolation in the scholarship of learning and research. In a qualitative study investigating cases of student isolation among distance learners, Vighnarajah and Santhiram (2014) found that poor engagement with Library services was among the precursors that led students to isolate themselves from the different interactions one would expect from a university learning experience. They further emphasized that distance learners will find it difficult to search for information online particularly if they are unfamiliar with search engine technology and library databases such as EBSCOHost Online Research Databases, Books 24x7 and eBrary. If not attended to accordingly in the early stages of the learning and research work, students who experience difficulties in effectively searching for information and utilizing the said information could find themselves to feel a sense of isolation. This is a situation that should not be taken lightly as it may lead, almost always impulsively, to other relevant learning concerns, such as developing the perceptions of incompetency of learning and the encumbrance of returning to learning, more so of engaging in distance learning.

In light of the aforementioned implication, relevant stakeholders must play their role in guiding students to improve on their information seeking behavior. The Library plays the most crucial role in this perspective of facilitating distance learners who are not accustomed to effective information search behavior and utilization of information, and this should be sustained as a continuous effort in the scholarship of learning and research. This view is in line with Kumar (2013) who emphasizes that the Library should organize more programmes and seminars to disseminate awareness among students on effectively collaborating with the Library for information search and utilization. Also, it is imperative that these affected groups of distance learners are made aware of this concern to encourage them to seek the necessary guidance from the relevant stakeholders - this is a critical finding that requires attention on part of the Library as well as the users (distance learners). For instance, Devi and Dlamini (2014) points out that while 92% of library users are aware of e-resources, 32% of this group finds it difficult to use these e-resources for their immediate needs. Moreover, it is crucial that these measures by the Library must be supported by the relevant academics and faculties.

It was also interesting to note from the findings that experiencing problems in information search positively correlates with effective utilization of information. In other words, students who experience problems in searching for information is most likely, with 32% of possibility, to experience problems in effectively utilizing the said information mainly with concerns towards integration of information, citation of information and chances of plagiarizing work. This is a matter of grave concern as pointed out by Head and Eisenberg (as cited in Head, 2013, p.474): *“Eighty percent—eight in ten of the students PIL surveyed in 2010—reported having overwhelming difficulties with getting started on research assignments and determining the nature and scope of what their instructors required of them.”* PIL, acronym for Project Information Literacy, was a series of national studies that attempted to investigate the scenario of a college student in an era of digital age. With support from major institutions such as Institute of Museum and Library Services (IMLS), Cengage Learning, Harvard’s Berkman Center for Internet and Society and ProQuest, PIL addressed the findings of surveys and interviews of more than 11,000 students from 57 colleges and universities across the US.

Hence, it is imperative for students to develop a sense of awareness of this positive correlation between information search and information utilization in attempt for them to take the necessary measures to seek for guidance from the relevant stakeholders. However, it was even more alarming to discover that the services of a librarian were tremendously underutilized: “*Across all PIL surveys, students tremendously underutilize librarians. Eight out of ten of the respondents (80%) in PIL’s 2009 survey reported rarely, if ever, turning to librarians for help with defining topics or searching for sources when working on course-related research assignments.*” (Head & Eisenberg, 2009).

Conclusion

Emergence of the Internet in the frontiers of distance learning has impacted the delivery of education in more ways than one. This attempt to understand the profiling of information seeking behavior among distance learners is no more than a fraction of a larger quality assurance measure to advise and guide students how to industriously experience distance learning at its best. All in all, results from this study have confirmed that distance learners (at least, in the context of Wawasan Open University) experiences critical difficulties in effectively searching for information and utilizing the said information in the scholarship of learning and research. Also, efforts are required from Library and relevant stakeholders in guiding distance learners to successfully acquire and manage information in this digital age. This paper reports the preliminary findings, and is by no means a comprehensive review on profiling information seeking behavior among distance learners. With this in mind and ardour to investigate further into the various facades of profiling information seeking behavior, the scope of research has been extended to study a wider population of distance learners in Wawasan Open University.

Acknowledgment

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BOTTOM – UP QUALITY FOR ODL

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Abstract

This is not a hypothesis-testing or theory-building paper. The paper raises some fundamental questions about the present structure and operations of Open and Distance Learning (ODL) built around traditional concepts of quality. The paper suggests new roles for ODL institutions, built around new concepts of quality and quality measures. While this is not a theory-building paper, the concept of quality proposed has elements that can contribute to a new understanding of ODL operations. In this sense, the paper may be deemed to contribute to new- theory building, specifically to a grounded theory of ODL. The paper views ODL as a system of interacting institutions. The business concept of quality is examined and its relevance and application to ODL explored. The paper develops a conceptual model and framework for analysis and uses it to assess the present performance of ODL providers and suggests future directions built around new paradigms. The analytical framework used in the paper is derived from marketing theory, the writer's experience working with Indira Gandhi National Open University and the Open University Malaysia, and teaching adult students over the last 20 years. A new model for managing ODL is proposed. The binding theme in the paper is the concept of quality in ODL - what it is and how it should be measured. The paper does not present any findings or conclusions because that is not the objective. Rather, the paper generates a number of key questions and propositions for discussion at the Conference and for possible future research. The questions are intended to guide thinking about quality and what it means in the context of ODL. The premise of the paper is that the present concept of quality underlying ODL is too restrictive. A new paradigm in thinking about quality is needed if ODL providers are to achieve their mission. The present research on ODL largely concentrates on internal measures of quality. The true measure of ODL quality can only come from the outside.

Introduction

Quality is a foundational concept in education, at the elementary, secondary, and tertiary levels. The pursuit of “quality” in education is a general goal of all educational institutions, both public and private, including ODL providers. The origin of the concept of quality in ODL is not clear. Possibly, we have borrowed it from the business world where quality is a common metric used to measure products and services. Even in business, quality remains a nebulous concept. There is little agreement on what constitutes quality. Like beauty, quality lies in the eyes of the beholder. Who decides what quality is? The general consensus in business is that it is the customer who determines quality, not the provider of goods and services. The Japanese success in marketing is largely due to this approach to quality.

How do we in education view quality? Do we see quality as determined by the customer? I would contend that we do not subscribe to the concept of quality emanating from the customer. In fact, we believe in the opposite – we think we know what quality is. Our function, as educators, is to transfer quality education to students, our customers. The students are the recipient of quality education as defined by us, the education providers. The student, our customer, has little or no say in determining the quality of education that is given to him. With mass education, the “standardisation” of the education product has become even more prevalent. There is little room for “customisation” of the product or for co-designing the product with the student as customer.

Business has found ways to co-opt the customer in product development and delivery through strategies like mass-customisation, co-design, and crowd sourcing. These strategies help not only to reduce business cost but increase customer satisfaction and “fit” with customer needs and wants. But in education such adaptation and involvement of the customer is perceived to be “diluting” quality. We stick to the dogma that we know best what is right and good for the student. The student has nothing or little to contribute to the educational process, although it is his education we are talking about, not ours. Such an approach will spell disaster in business. In business, we give what the customer wants. In education, we decide what the customer should have.

Objective of the Paper

As educators, can we continue to take this approach to our customers? Or should we learn from business and redefine the role of students in the education process? If we take the business approach to understanding customers and their role in product development and delivery, what implication has this for the concept of quality in education? In particular, how should ODL institutions define quality? This paper is directed to addressing these questions. The questions are particularly significant for ODL institutions, given their nature, role, and function. The questions posed define the direction and content of this paper.

This is not a hypothesis-testing or theory-building paper. The paper develops a conceptual model and framework to analyse the present operations of ODL and then proposes an alternative model to improve the relevance and effectiveness of the ODL system. The paper is both evaluative and prescriptive - prescriptive in that it provides an alternative system of operations for ODL. The binding theme in the paper is the concept of quality in ODL - what it is and how it should be measured.

The paper does not present any “findings” or “conclusions” because that is not the objective of the paper. Rather, the paper presents a number of key questions and propositions for discussion at the Conference and possibly for future research and investigation. The premise of the paper is that the present concept of quality underlying ODL is too restrictive. A new paradigm in thinking about quality is needed if ODL institutions are to achieve their mission. While this is not a theory- building paper, the concept of quality proposed has elements that can contribute to a new understanding of ODL operations. In this sense, the paper may be deemed to contribute to new theory- building, specifically to a grounded theory of ODL.

The Conceptual Model

To understand and analyse the dimensions of quality in the context of ODL, a conceptual model is utilised to identify the linkages in the ODL system. The institutions in the model provide the analytical framework for understanding the role and function of ODL and for seeking answers to the quality questions raised earlier in the paper. The model and analytical framework employed here is derived from marketing theory and the writer’s experience working with Indira Gandhi National Open University and the Open University Malaysia. The insights also come from teaching adult students the last 20 years.

The Analytical Framework

The conceptual model for analysing ODL has four interacting institutions:

1. Regulator
2. ODL institution
3. Student
4. Industry

The “quality” of education provided by ODL is a function of the institutions in the system and their relative roles, functions, and interactions. At the conceptual level, all four institutions in the ODL system act collectively to define “quality.” Observations of ODL and their present operations show that two institutions play the dominant role in defining what is quality and the type of education that is provided – regulators and ODL institutions. The other two institutions- students and industry- have very little impact on ODL. It is posited that this dynamics is detrimental to ODL.

The Present Model of ODL

The present structure of ODL is indicated in Figure 1 below.

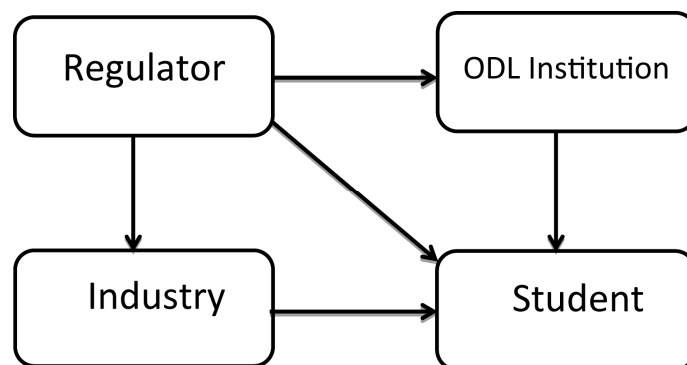


Figure 1: The Present Structure of ODL

A general review of the literature on ODL indicates that all ODL institutions are regulated by some external authority, most of the time a government agency or agencies. The degree of regulation varies with country and context. In general, regulatory bodies play the deciding role in determining the function of ODL providers, the programmes they can offer, the structure of the programmes, and the customers (students) they can serve. They are the determining player in the ODL system by virtue of their regulatory authority.

In the present structure, the ODL provider’s capacity to respond to the needs of the student is severely limited. It would be bizarre in business if a company cannot respond to customer needs. A business that does not respond to customer needs for products and services will not last long. Even if an ODL institution is not a business entity, it still needs to operate on the same principle - it exists to meet the needs of the customer. The customer (student) is the *raison d’être* for its existence. If the ODL provider is a private entity relying on the market for its funding, the need for ODL to respond to the customer and his needs becomes even stronger. The ODL provider then has to operate on business principles if it is to be effective and achieve its mission.

In the present model, the regulatory agencies do more than regulate - they prescribe. They prescribe what ODL providers can offer and cannot offer. The prescriptions can cover programmes, courses, course contents, teaching hours, duration, and admission requirements. Certificates, diplomas and degrees are all defined by the regulatory bodies. ODL providers cannot deviate from these prescriptions. The student may want something else, but the ODL institution cannot meet this demand because the controlling bodies have decided what is best for the student.

This poses a dilemma for ODL institutions, especially for those that are private and need to generate their own funds. The regulators justify their role and function in the name of “quality” – to ensure that ODL provides only quality education. They say they act to protect the student from abuse by unscrupulous education providers. This raises the fundamental question posed earlier in the paper: Who decides what quality is? The regulator, the ODL provider, or the student as customer? In the business environment, the answer is clear. The customer decides.

A business can claim its products are great, but the customer may think otherwise. The business may have its own concept of what is quality. The customer may see quality in other terms. The two need to be congruent if the business is to succeed. Quality has many dimensions and the perception of quality varies from customer to customer. The business world has learnt to deal with this problem by letting the customer define quality. Can we do the same with ODL? Can regulatory bodies back off and let ODL providers meet the needs of the market through creative and innovative products that don’t fall within the definition of quality as laid down by the regulators? This paper poses this as a question for the Conference to discuss. The time may be right for a new look at the meaning of quality for ODL.

ODL institutions are different from traditional universities and institutions of higher learning. They are “open universities”. But are they really open? Open implies:

- Flexible admission
- Innovative programmes
- Industry-centred course contents
- Meaningful student evaluation and assessments
- Convenient delivery
- Relevant certifications

The primary principle is giving the customer what he needs and wants. Shouldn’t we measure quality in ODL in terms of the extent to which we meet the needs of students rather than the extent to which we comply with the requirements of the regulators? ODL exists to provide learning opportunities to non-traditional students. To meet this obligation, ODL needs to function differently from academic universities. This necessitates redefining the meaning of quality in the context of the mission and function of ODL.

A revised definition of quality implies re-examining the role and function of the regulators. Should they move from regulation and prescription to moderation and facilitation? How much of decision making should be decentralised to ODL providers? What kinds of decisions should continue to rest with regulators? What should be the purpose of such controls exercised by regulators? Can ODL providers be freed from the control of regulators and allowed to function on their own with self-regulation and self-accreditation? What will be the implication for quality from such restructuring of ODL? These are crucial questions for the Conference, if not for the present at least for the future architecture of ODL. Like everything else, ODL too needs innovation to remain relevant.

To deal with the dysfunctions in the present ODL system, a new operational model for ODL is proposed. The proposed model is significantly different from the present model. In the present system, it is the “regulator” who plays the key role. The regulatory agency, through its decisions over programmes and delivery, controls all the other three institutions - ODL provider, student, and industry. The proposed model shifts decisions to students and industry. It is “student-centred,” with the ODL provider as the institution for meeting student and industry needs. In the proposed model, the regulator becomes a “moderator”, which implies a different role for the regulatory agency - a role that is more facilitating than controlling.

The Proposed Model of ODL

The proposed structure of ODL is indicated in Figure 2 below.

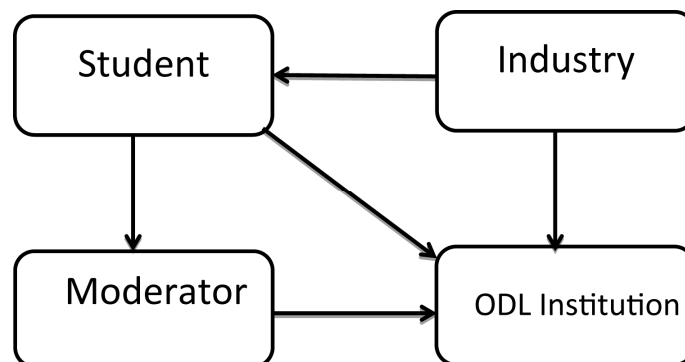


Figure 2: The Proposed Structure of ODL

In the proposed model, the dynamics of the ODL system changes. The key players now are no longer the regulatory agency and the ODL provider. The dominant role shifts to the student as customer and the industry as the ultimate user of the education and training provided by the ODL institution. The regulator now becomes a “moderator”, a significant role change.

In the proposed structure, quality in ODL is measured in relation to:

- Programmes
- Delivery systems
- Operations and processes
- Meeting student needs

All the above are important functional areas where ODL has to show quality. Except for “meeting student needs”, the rest are internal to the organisation – they are internal measures of quality. They are determined by those managing ODL. They are essentially instrumental measures of quality - types of programmes offered, how programmes are delivered, and the operational and managerial processes related to programme and programme delivery.

The shortcoming of this process quality is that it is myopic. It ignores the most important metric of quality – what the customer thinks of the programmes and how they are delivered by the ODL institution. Instrumental quality can be very high, but if the customer, the student, does not see value in it, there is no quality. Quality measures and metrics that do not involve the customer are meaningless. If there is no congruence between what the ODL provider considers quality and what the student considers quality, there is no quality. New sophisticated delivery systems based on the latest technology may be high on the quality list of ODL institutions, but if the student values the old technology of classroom teaching, sophisticated teaching technology is not quality.

Quality lies not inside the ODL institution but outside it, in the students ODL is expected to serve. Observational evidence indicates that ODL is falling into the trap of defining quality internally. This is a mistake, given the mission of ODL. In contrast to academic universities (even they are finding it necessary to pay attention to what students want), ODL needs to define quality externally – from the eyes of the student. The ODL clientele is different from that of traditional universities. The purpose and mission of ODL is different. The students want different things and have different expectations. Their concept of quality is different from students in academic institutions. Given this context, the concept of quality and the measures of quality applied in normal academic institutions are not relevant to ODL. ODL needs to work out its own concept of quality and the relevant metrics for measuring it.

Regulators must understand that there is no one common concept of quality that can be applied uniformly to measure the performance of traditional universities and ODL institutions. It is like comparing apples and oranges. Regulators should not force ODL into the same mould with academic institutions whose purpose and mission is different. The meaning and measure of quality has to be related to the purpose and mission of the institution.

In the same vein, ODL providers must be clear what they are. They cannot be open universities and at the same time offer programmes that belong to academic institutions. They cannot be both. They run the risk of losing focus and identity. The way you run a university is different from the way you run an open university. The measures of quality are different. A review of the research literature on ODL shows that most of the research is on the internal processes of ODL - admission, programmes, courses, course contents, course delivery, student assessment, student counselling, student dropout, online information, study materials, library resources, student feedback, etc. These are all important, but they are more relevant to universities than ODL. They do not answer important questions related to ODL, such as:

- Who should decide what programmes ODL institutions should offer? ODL providers, regulators, or the market?
- What should be the nature of these programmes if they are to meet industry needs?
- How should the programmes be delivered in term of cost, duration and content? Can some programmes be delivered on industry premises?
- Do accreditation processes of academic programmes in traditional universities apply to programmes offered under ODL?
- Can managers from industry teach courses offered under ODL? Such people may not possess academic credentials expected by regulators.
- Can certifications be jointly offered by ODL institutions and professional associations in industry? Can these certifications be different from those offered by traditional universities?

The above are some questions that ODL institutions need to address if they want to define quality and relevance in more meaningful ways. The answers to these questions will be measures of ODL quality from the outside. The true measure of ODL quality can only come from the outside.

Student

The student – the customer – is the reason why there is ODL. The student determines the ultimate success or failure of an ODL programme. This applies even if the ODL is funded by the government. It can still fail in its mission if it fails to attract sufficient students to its programmes. The student is the key success factor in the ODL system. The system rests on satisfying student needs.

The ODL student is different from the normal university student. As a mature, working student, his needs and expectations are different. His academic background is different compared to the university student. His level of motivation is different. He is a lot more motivated because he badly wants the education the ODL can provide him to advance his career prospects. He sees immediate value and utility in the education and training provided by ODL, unlike the university student who is not employed yet and cannot comprehend the nexus between education, work, and career advancement.

Because the ODL student has a clear vocational purpose, his expectations tend to be narrow and specific. His expectations are job and career related. He wants knowledge and skills that he can employ in his work environment. He is practical and pragmatic. He also works under time and financial constraints, as he is likely to be married and in his thirties or early forties.

The expectations and demographics of the ODL student dictate a certain kind of education as best meeting his needs. Obviously, it is not what is offered in the traditional universities. If ODL is to be effective, it needs to match the expectations of the ODL student. This calls for a clear understanding of the needs of the adult, working student and his constraints – time, finance, learning capacity, and fear of returning to “school”. The programmes offered in ODL need to be built around the strengths and constraints of the potential student. Such programmes will have distinctive characteristics, including:

- Shorter duration
- Lower cost
- Convenient time
- Convenient location and delivery
- Practical orientation
- Job and industry related
- More teaching and hand – holding
- Meaningful student evaluation and assessment

The ODL programme characteristics are quite different from what we would normally find in an academic institution. They are characteristics that meet the needs of the adult learner and industry. The ODL provider that wants to be relevant needs to structure its programme offerings and its operations in congruent with these characteristics. The quality of ODL should be measured in terms of the degree to which its programmes and operations meet these expectations of the learner. The closer the fit between the two, the higher the quality. This is entirely different from the quality yardsticks presently used by ODL providers and regulators to measure quality. In the proposed model, quality flows up, not down. The buyer decides what is quality, not the vendor.

For this concept of quality to work, a new paradigm in thinking about quality is required on the part of regulators and ODL institutions. It calls for a new mindset, a mindset built on flexibility, decentralisation, and responsiveness to student needs. The present system of managing ODL is based on centralisation and control, not on the need to adapt and respond to student needs. For example, in Malaysia the regulators define what a certificate, diploma or degree is. A degree must have 120 credits and a diploma 90 credits. The justification given is to ensure uniformity and quality. This is a top-down approach to quality. But adult learners want a bottom-up concept of quality. They want a degree, but not 120 credits which does not meet their needs. They want the degree to be structured and delivered differently.

This is the challenge for ODL and regulators. Do we insist on a 120-credit degree or are we prepared to innovate and find a solution to meet the needs of the learner? If we are not prepared to innovate, can ODL institutions legitimately call themselves “open universities” and providers of “life- long” learning? This is another question for the Conference to ponder.

For ODL to function in the proposed model, major programme decisions that presently rest with the regulators need to be decentralised to the level of the ODL provider. In the final analysis, the question is: Are regulators prepared to trust ODL providers with quality?

Industry

Industry is an important element in the ODL system. In the context of ODL, industry is largely the business sector. Governments have many programmes to upgrade their employees. Also, governments have specific requirements for employee promotion and career advancement. It is more difficult for ODL providers to fit their programmes to the needs of the public sector. This is why governments tend to send their employees to their own training colleges and institutions.

The primary clientele for ODL is the corporate sector. The corporate sector views competence and quality differently - it is more interested in performance than compliance with requirements. For the business, the key question is: Has the worker the relevant skills and knowledge to perform effectively in the organisation?

How can ODL providers meet the requirements of industry? Clearly it is not by offering programmes and certifications that are designed for academic institutions. There is need to carefully examine what industry wants in terms of human capital and then translate these wants into appropriate programmes, structures, contents, delivery systems, and certifications. At the moment, ODL providers do some programme adaptation to meet industry requirements, but the customisation is minimal. Most of the adaptation is in the area of programme delivery, especially the use of technology. There is little substantive customisation in terms of:

- Entry requirements
- Course content
- Programme certification
- Teaching faculty

The certifications that can be awarded by ODL providers are still defined by regulators. In Malaysia, a degree is 120 credits and a diploma 90 credits. To get around the problem, ODL providers are forced to find creative ways to come up with the required 120 or 90 credits for their programmes. This should not be the case. Regulators should allow ODL institutions to design programmes with different certification requirements for adult learners from industry.

The programmes may not even need “credits”. Other assessment units may be more appropriate to meet industry needs. This requires moving away from the present policy of standardisation and top-down definition of quality. ODL can never really become relevant to industry until the providers have a significant role in defining the programmes they want to offer. This means programme relevance and quality has to flow from industry and not from regulators. This cannot happen until regulators develop a new paradigm of quality and are prepared to trust ODL providers with delivering quality programmes. This means regulators moving away from control, regulation, and prescription to moderation and facilitation.

It also means the centre of the ODL system will need to shift to ODL providers and industry. It also means ODL providers will need to work closely with industry and professional associations. It may even be necessary to offer programmes jointly with industry and in industry where industry provides the key teaching faculty. Are we ready to move in this direction? This I leave it to the Conference to debate.

Concluding Remarks

In this paper there are no “conclusions” or “findings”. The paper has raised a number of issues related to the purpose, operations, and performance of ODL. The paper builds around the central theme of “quality” in the open university system. The premise of the paper is that ODL, to be effective, needs to be structured differently, needs to operate differently, and needs to offer different programmes with different delivery systems. It needs to be built around a different concept of quality. The power structure in the ODL system has to change – with decision-making shifting to ODL institutions, the student as customer, and to industry as the beneficiary of the education provided. The paper contends that the present structure governing ODL is restrictive and limits the full potential of what ODL is capable of achieving. The paper calls for innovation in thinking about how ODL should be organised and managed.

For purposes of discussion at the Conference, key questions raised in the paper are extracted and presented below.

1. How do we in education perceive quality?
Do we see quality as determined by the student as customer?
2. What should be the role of the student in quality determination? Do we see student involvement as “diluting” quality?
3. What is the present capacity of ODL institutions to respond to market needs?
4. Regulatory agencies do more than regulate - they prescribe. Is this a legitimate role for them?
5. How much of decision making should be decentralised to ODL institutions? What should be the nature of these decisions?
6. What are the implications for quality in decentralising decisions to ODL providers?
7. How do ODL providers presently define quality? Given their role and mission, how should they define quality?
8. ODL providers must be clear what they are. They cannot be ODL institutions and at the same time offer programmes that belong to academic institutions. How legitimate is this?

9. Should the quality of ODL be measured in terms of the degree to which its programmes and operations meet the expectations of the learner?
10. Do we need a new paradigm in thinking about quality as applied to ODL?
11. How can ODL providers better relate to industry and serve industry needs?
12. How do present structures, policies, and operations limit and restrict ODL institutions from performing to their full potential?

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AN INVESTIGATION INTO THE STUDY APPROACHES OF OPEN DISTANCE LEARNERS

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Abstract

The study examined the study approaches of undergraduate students of Open University of Sri Lanka (OUSL) with the objectives to explore their study habits, time management skills and peer learning methods. Descriptive survey research design was used for this study. A sample of one hundred and fifty students following degree programmes namely B.A (social Sciences), B.Sc, B.Tech and B.M.S at Jaffna Regional Centre (JRC) of the OUSL were purposively selected for this study. A self developed questionnaire was used for data collection. Data collected were analyzed using frequencies and percentages. ANOVA was used to study the factors affecting study habits. Findings from the study revealed that Reading chapter was the most used method (35%) followed by bulleting and text annotations (30%). The least used method was the quiz let with 28% reporting they never used it. Further, the results showed that only 30% of the students were able to allocate at least four hours for their studies every day. Most of the students expressed that they spend more time for their family and job responsibilities. The results also indicated that 59% of the students study in groups where group members help each other in subject matter. But only 29% expressed that they received support from their senior students. Significant relationship was found between Study programmes, gender, level of study and employment status of the open distance learners and their study habits. Based on the findings, the study concluded that most of the distance education students exhibit ineffective study habits and time management strategies. However a variety of peer learning methods are widely used by the open distance learners. It is therefore recommended that the students should be guided and supported by the University regarding good study habits, time management skills and collaborative learning strategies. The study also recommends the students to pay attention in planning and organizing their study activities.

Key Terms: *Open Distance Learners, Study habits, Time management skills, Peer learning methods*

Introduction

The Open University of Sri Lanka (OUSL) is the one and only institution which caters to a wide population of people in Sri Lanka to pursue higher education at their choice by Open Distance learning. It operates based on the concept Open Distance learning (ODL) and provides educational opportunities for working adults, providing them the road to success, surpassing age, vocation, gender, race, ethnicity and religion. It offers many degree programmes by ODL system through its Regional and Study Centres spread all over the country.

As adult learners on the distance programmes, Open University students are mostly challenged by many problems such as sudden increase in their responsibilities, influence of job and families in their studies, lack of motivation, physical, emotional, psychological and social issues, increased demands placed upon them by the university etc. The OUSL has clearly spelt out the number of hours students need to spend on each session of their course module. For instance one credit course would require 45-50 hours of study. Under normal circumstances, a student may register up to 36 credits of courses in an academic year. According to this, a student is therefore expected to spend a minimum of five hours be set aside every day for study. However distance education students will find it difficult to devote the time required for self-study because of pressure from their work places, interference from family members, financial constraints as well as other social issues that take chunk of their time.

Distance education students may exhibit wide range of study habits. They may be either positive or negative. It is positive when it helps to promote effective learning and negative when it inhibits learning. Therefore their study habits should be explored in order to guide them choose appropriate study habits.

Gao (2012) indicated that in ODL, students are physically, emotionally and socially separated from the institution and they feel isolated. The risk of students feeling isolated is very common in distance learning and also needs to be addressed and minimized. To address the problem student – student interactions should be encouraged. Students learn a great deal from their peers through such interactions. Effective peer learning methods have many pedagogical advantages such as improved performance and widening student retention.

Objectives of the Study

The general objective of this study is to explore the study approaches of undergraduate students following their degree programmes through Open Distance Learning at the Jaffna Regional Centre of the Open University of Sri Lanka. The specific objectives of the study are:

- To assess different study habits of open distance learners
- To identify the time management practices adopted by the open distance learners for self-study
- To explore the different peer learning methods of open distance learners
- To study the relationship between demographic characteristics of open distance learners and their peer learning habits

Research Questions

In this study the central research question is what are the study approaches of open distance learners?, that is accompanied by the following sub questions to guide the study.

- What are the different study habits practiced by open distance learners
- What are the time management practices adopted by the open distance learners for self-study
- What are the peer learning methods used by open distance learners
- Are there any significant relationship between age, gender, marital status, employment and the degree programme of open distance learners and their peer learning habits

Significance of the Study

As the Regional Centre in Northern Sri Lanka, the Jaffna Regional Centre (JRC) of the OUSL extends its services to students in the northern region. However empirical evidence shows that the undergraduates at JRC face difficulties in completing their courses successfully in the specified period and often become inactive in their study programmes, as illustrated in Figure 1. According to Ismail (1997), variables related to study behaviour of OUSL students influence this drop out. However research studies on study approaches of open distance learners in relation to their study habits, time management skills and peer learning methods are practically nil. As academic coordinators, the researchers needed to address the drop out problem by analyzing the study approaches of their

students. Therefore the present study tries to explore the study approaches of undergraduate students following degree programmes at JRC of OUSL.

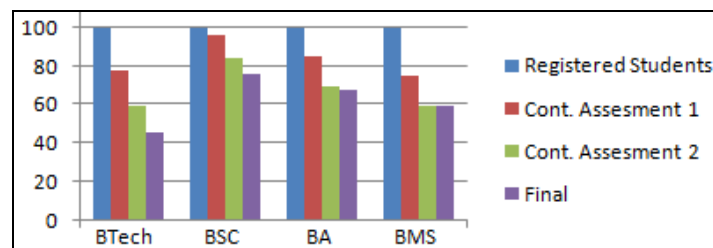


Figure 1: Undergraduate student involvement in academic activities at JRC in 2013/2014
(From Centre statistics)

Literature Review

Distance Learning is a form of education where student and instructor are not in the same place and instructions occur through formats such as printed modules, online instruction and multimedia packaged formats (Somuah et al. 2014). This is a mode of study where the students are not physically present in a traditional setting such as a classroom and are separated by space and time from their tutor and the institution, but keep in close touch with specially formulated study materials. Brindley *et al* (2012) state that distance education expands rapidly as it gains worldwide acceptance by students, educational institutions, employer organizations, and the public at large. It makes education accessible to underserved populations and is flexible in fitting into complex lifestyles, schedules, and responsibilities of today's learners. However Dadigamuwa & Senanayake (2012) observed that the number of students dropping out in a distance learning programme is significantly higher than that of a conventional programme. They further expressed that several factors affect the students' performance and subsequent drop out in ODL systems. Willging & Johnson (2004) conducted a study on Factors that influence students' decision to drop out of online courses and identified lack of time to complete assignments, lack of interaction with instructors and students, job and family responsibilities etc as the reasons for students' drop out. The present study tries to throw light on such factors by exploring study approaches of open distance learners in relation to their study habits, time management skills and peer learning methods in Sri Lankan context.

Study habits are the ways adopted by a student for his or her private or after class room learning. Study habits are important as they influence the academic performance of students. Morgan (1991) noted that those who are not confident about their learning abilities tend to concentrate on memorizing facts in order to complete assignments and write examinations. They end up with weak grades as a result of poor understanding of course materials. Somuah *et. al.*(2014) also emphasis this and state that ineffective study habits of distance learners lead to poor performance in examinations, poor understanding of concepts and high rate of student drop out. Further, Ogbodo (2010) found that most problems that used to contribute students' poor performance in tests and examinations were lack of proper study habits. Many researchers have identified the relationship between study habits and the academic performance going together in the same direction.

According to Dzakiria (2012) learning interaction is fundamental to ODL, because study completion success is dependent on how effective the students are interacting with the course material, tutors and with their peers in their learning. Peer learning is one method to encourage meaningful learning which involves students teaching and learning from each other. It involves a sharing of ideas, knowledge and experiences and emphasizes interdependent as opposed to independent learning (Boud, 2001). He further describes it as a 'two-way reciprocal learning activity' in which there is mutual benefit to the parties involved.

Thus, there emerges a need to gain an insight into the study habits, time management skills and peer learning methods of students in distance learning in order to guide them for better performance in their courses.

Methodology

Descriptive Survey research method has been adopted for this study. Descriptive design is considered appropriate because this study was designed to describe, analyse and determine the study approaches of open distance learners. The main data collection instrument was a questionnaire which was developed by reviewing related literature on study habits, time management and peer learning. In this self-developed questionnaire questions were set under four thematic areas namely student background information, study habits, time management practices and peer learning habits. These aspects were measured on a discrete five point scale. The quantitative data gathered through the survey questionnaire were analyzed using the basic quantitative statistics.

Research Design and Sample

Population of this study was students pursuing degree programmes at OUSL. Target population was students following degree programmes at Jaffna Regional Centre (JRC) of the Open University of Sri Lanka (OUSL). 150 undergraduate students following four degree programmes namely B.A (Social sciences), B.Sc, B.Tech and B.M.S at JRC of OUSL were purposively selected for this study.

Researcher designed survey questionnaire was used to collect data on study approaches of the students. Out of the 150 questionnaires distributed 96 were successfully retrieved. As Tamil is the mother tongue of the JRC students the questionnaire was designed in Tamil. It contains 4 parts. Part I-Back ground information, part II-study habits, part III-time management practices and part IV-peer learning habits. Students were asked to indicate their responses to each item on a Likert scale ranging from 5 representing “Always”, 4 representing “Generally”, 3 representing “Sometimes”, 2 representing “Rarely” and 1 representing “Never”.

Data Analysis

This part presents the findings of the study. For the quantitative data of the questionnaire survey, data analysis was conducted with the use of a computer programme SPSS (Statistical Package for Social Sciences). The data were analyzed using quantitative techniques mainly frequencies and mean. One way ANOVA was used to study the relationship between demographic variables and study habits of undergraduate students.

Part I of the survey questionnaire deals with the background information of the respondents. Their responses were analyzed using frequencies and percentages. Table 1 presents the analysis of students' background information.

Table 1: Background Information of the Students

	Main Categories	Sub Groups	Number	Percentage
1	Sex	Male	35	36%
		Female	61	64%
2	Age	20-40 Years	89	93%
		41-50 years	7	7%
3	Degree programme	B.A.(Social Sciences)	37	39%
		B.Sc (Natural Sciences)	29	30%
		B.M.S	16	17%
		B.Tech	14	15%
4	Marital status	Single	72	75%
		Married	22	23%
		Divorced	1	1%
		Widow/Widower	1	1%
5	Employment	Employed	67	70%
		Unemployed	29	30%

Part II of the questionnaire deals with the study habits of Open distance learners. Table 2 summarizes the students' responses to the questions on their study habits.

Table 2: Study Habits exhibited by the undergraduate students of JRC

	Study Methods Used by the Students	Mean	SD	Always		Generally		Some Times		Rarely		Never	
				N	%	N	%	N	%	N	%	N	%
1	Read the chapter	4.74	0.56	35	35	39	41	14	15	8	8	0	-
2	Make an outline of the lesson	4.44	0.95	17	18	32	33	35	36	7	7	5	5
3	Bulleted notes	1.83	1.41	29	30	23	24	21	22	16	17	7	7
4	Draw pictures/Diagrams	1.72	1.12	8	8	28	29	30	31	18	19	12	13
5	Make charts / Graphic organizers	2.39	0.79	11	11	14	15	43	45	17	18	11	11
6	Self-quiz	1.87	1.29	26	27	27	28	25	26	12	13	6	6
7	Text annotations	4.52	0.97	29	30	38	40	17	18	7	7	5	5
8	Sticky notes	1.69	1.24	10	10	8	8	28	29	24	25	26	27
9	Text questions	1.78	1.25	6	6	28	29	25	26	21	22	16	17
10	Quiz let	1.56	1.00	4	4	16	17	21	22	28	29	27	28
11	Study in groups	4.24	1.34	17	18	21	22	26	27	16	16	16	17
12	Make concept maps	1.35	0.95	4	4	11	11	25	26	33	34	23	24
13	Don't study	2.11	0.66	3	3	6	6	10	10	17	18	60	63

Responses on the time management practices adopted by the students obtained for the part III of the questionnaire are summarized and presented in the following table.

Table 3: Practices Adopted by the Students for Time Management

	My Time Management Practices	Always		Generally		Some Times		Rarely		Never	
		N	%	N	%	N	%	N	%	N	%
1	I prepare master schedule for each semester	19	20	40	42	21	22	9	9	8	8
2	I update it monthly or weekly	14	15	31	32	35	36	9	9	7	7
3	I carefully stick to it	8	8	36	38	25	26	17	18	10	10
4	I allocate time for exercise and social relationships	18	19	29	30	22	23	23	24	4	4
5	I get at least six hours of sleep each night	48	50	30	31	15	16	2	2	1	1
6	I study at least four hours every day	29	30	30	31	21	22	11	11	5	5
7	I get my assignments done on time	55	57	27	28	9	9	4	4	1	1
8	I use the time effectively when I study	34	35	41	43	15	16	4	4	2	2
9	I spend more than ten hours for my job every day	39	41	29	30	12	13	2	2	14	15
10	I spend more than four hours for my family responsibilities every day	24	25	30	31	25	26	12	13	5	5

Part IV of the questionnaire deals with peer learning methods of the undergraduate students. Table 4 provides the information on peer learning methods used by the students.

Table 4: Peer Learning Habits of Open Distance Learners

	Peer Learning Habits	Always		Generally		Some Times		Rarely		Never	
		N	%	N	%	N	%	N	%	N	%
1	Groups of 2-4 people joined together to study	22	22.92	12	12.50	28	29.17	20	20.83	14	14.58
2	More than 4 people joined as a group to study	34	35.42	20	20.83	25	26.04	16	16.67	1	1.04
3	Discuss on a topic or question in groups	22	22.92	17	17.71	21	21.88	28	29.17	8	8.33
4	Group members help each other in subject matter	14	14.58	6	6.25	18	18.75	32	33.33	26	27.08
5	Senior students support for learning	24	25.00	18	18.75	22	22.92	19	19.79	13	13.54
6	Peers teach subject matter	15	15.63	9	9.38	27	28.13	32	33.33	13	13.54
7	Peers perform as mentors for learning	14	14.58	9	9.38	29	30.21	26	27.08	18	18.75
8	Peers assess the learning	18	18.75	12	12.50	29	30.21	27	28.13	10	10.42
9	Discussions with peers through social networks	16	16.67	20	20.83	22	22.92	23	23.96	15	15.63
10	Discussions with peers over the phone	9	9.38	14	14.58	22	22.92	32	33.33	19	19.79

To study the relationship between students' demographic characteristics and their study habits one way ANOVA was used. Table 5 provides the results for ANOVA on the overall mean scores of study habits.

Table 5: ANOVA on the Overall Mean Scores of Study Habits

Demographic Variables	ANOVA ON OVERAL MEAN SCORES OF STUDY HABITS					
		Sum of Squares	df	Mean Square	F	Sig.
Gender	Between Groups	4.061	1	4.061	30.471	.000
	Within Groups	6.930	52	.133		
	Total	10.990	53			
Age	Between Groups	.009	1	.009	.040	.842
	Within Groups	10.982	52	.211		
	Total	10.990	53			
Programme of study	Between Groups	5.053	2	2.527	21.706	.000
	Within Groups	5.937	51	.116		
	Total	10.990	53			
Level of study	Between Groups	5.112	2	2.556	22.177	.000
	Within Groups	5.878	51	.115		
	Total	10.990	53			
Marital status	Between Groups	.067	1	.067	.317	.576
	Within Groups	10.924	52	.210		
	Total	10.990	53			
Employment status	Between Groups	2.705	1	2.705	16.977	.000
	Within Groups	8.285	52	.159		
	Total	10.990	53			

Discussion

The purpose of the present study was to explore the study approaches of open distance learners in relation to their study habits, time management practices and peer learning methods. The analysis of the quantitative data obtained from the questionnaire survey revealed the following.

According to Table 1, it is clear that 70% of the students are employed and about 23% are married. It shows that most of the undergraduate students have family, social and job responsibilities.

Findings from the table 2 reveal the study methods exhibited by the students. The table indicates that reading chapter (76%) and text annotations (70%) were the study habits always or generally used by most of the students. Some of them used bulleted notes and self-quiz (50%). The least used method was found to be quiz let, 28% of the students said that they never used it. Draw pictures/diagrams, text questions and concept maps are also rarely or never used by the students. Further, only 18% of the students always study in groups. The results indicate most of the students rarely or never used effective study habits such as text questions, quiz let, group study or concept mapping appropriate for open distance learning.

From table 3 it is clear that only 30% of the students were able to allocate at least four hours for their studies every day. It indicates distance learners find difficulties in allocating time for self-study. According to the table 20% prepare master schedule for their studies. But, only 8% of them carefully follow it. 41% of the students expressed that they spend more than 10 hours for their job, where 25% spend more than 4 hours for their family responsibilities. However 57% of the students reported that they were able to get their assignments done on time. It indicates that distance learners try to manage their time in order to stick to the university schedule. However the results also shows that most of the distance learners face problems in time management due to family/job responsibilities.

According to Table 4, more than 36% of the students always joined as a group of more than four people with their peers to study. Further, more than 40% of the students expressed that, they always or generally discuss in groups with their peers on a topic or question and get senior students' support for their learning. Further 24% of the students stated that they discuss subject matter with their friends over the phone. On the other hand, 60% of the students said that, they never or rarely help their group members in subject matter. Further, more than 35% of them expressed that they rarely or never used peer learning strategies. So the results indicated that open distance learners rarely use peer learning strategies.

According to Table 5, no significant relationships were observed between the age and marital status and the study habits of open distance learners ($P = 0.000 > 0.05$). However the results revealed that gender, programmes of study, level of study and employment status of the open distance learners significantly affect their study habits. ($P = 0.000 < 0.05$). Significant differences were observed between the study habits of male and female students. Comparing to males (mean = 2.4692), female students always use variety of study habits (mean = 3.0950). Similarly, significant differences were observed between the study habits of students following different study programmes. For instance, students following B.A. degree programme (mean = 3.0831) always use more study habits than others. Level of study also significantly affect the study habits of the students. Those who are in level 3 (mean= 3.1025) always use a variety of study habits than others. Further, significant differences were also observed between the study habits of employed and unemployed students. Unemployed students (mean = 3.2114) use various study habits than their counter parts.

Conclusion

This study investigated the study approaches of undergraduate students following the degree programmes by open distance learning. Most of them rarely or never practiced effective study habits. Time management strategies were not always practiced by the students. Peer learning methods were also not always used by most of the students. Further, students' study habits were significantly affected by their gender, programme of study, level of study and employment status. Adopting effective study approaches in learning is a very important step in a students' educational development. In this regard students must develop appropriate study approaches to complete their academic task successfully. It is therefore recommended that, they should be provided with guidance services on their study approaches.

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QUALITY EDUCATION THROUGH OPEN SCHOOLING: CASE STUDY OF THE LARGEST OPEN SCHOOLING SYSTEM IN THE WORLD

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Abstract

*Quality Education (in a holistic, broad sense) is a multi-leveled experiential journey of discovery, expression and mastery where students and teachers learn and grow together. It is a quest for understanding and meaning. Its aim is to nurture healthy, whole, curious persons who can learn whatever they need to know in any new context. It is concerned with the growth of every person's intellectual, emotional, social, physical, artistic, creative and spiritual potentials and aims at integrating/creating balance between knowledge, skills and values. The Delors Commission Report, UNESCO, "Education in the 21st Century - Learning: The Treasure Within" saw education throughout life as based upon four pillars: **Learning to know; Learning to do; Learning to live together; and Learning to be.** This conceptualization of education provides an integrated and comprehensive view of learning and, therefore, of what constitutes education quality (Delors et al., 1996). Quality is essential for making any educational endeavour (including open schooling) meaningful and worthwhile. In Open schooling, this translates into quality in learning materials, learner support services, etc. In this backdrop, this paper aims at discussing and disseminating the quality aspects of education being provided by National Institute of Open Schooling (NIOS), India. The paper intends to show that apart from being the largest open schooling system in the world, NIOS is also committed to provide quality education. This is evident from its stated vision itself, i.e. "Sustainable inclusive learning with universal and flexible access to **quality school education** and skill development." The paper discusses various quality practices used in NIOS such as:*

- *Relevance of Courses & Programmes*
- *Quality Self Learning Materials*
- *Innovative Practices in Learner Support*
- *Use of Media & ICT (Information and Communication Technology)*
- *Integration of Academic learning with Skill Development*
- *Life Skills and value orientation*
- *Flexible, learner-friendly/learner-centric approach for universal access*

Keywords: *Quality Education, Open Schooling, Self Learning Materials, Media, ICT, Skill Development, Life Skills*

1. Introduction

Open and distance learning in school education system has been recognized as an effective alternative/supplementary mode for achieving the cherished goal of education for all in most developing countries. No doubt, huge resources are being invested for expansion and quality improvement in school education in India since independence, still there remain challenges in terms of high drop-out rate particularly among girls and various marginalized groups. Unsatisfactory student learning levels and poor teaching learning process, particularly in remote areas continue to affect the education system. Further, shortage of teachers inhibit any scope for meaningful learning opportunity for children in schools. Limited trained teachers are available in comparison to the demands within the school education system. In this backdrop, Open Distance Learning is considered as an effective vessel for addressing the issue of quality education in various countries.

Open and distance education (with its various learner friendly characteristics and inputs like flexibility in place and pace of learning, learner-friendly self learning material, Media and ICT support, Personal Contact Programme (PCP), recognizing and accommodating learning objectives based on learners' needs and interests, effective student support services, etc.) has emerged as the answer to most problems and issues in education. But just providing access to education is not sufficient for providing competitive advantage and fostering creativity in an individual for personal wellbeing and national development. Rather, providing quality education for all at all levels is the pre-requisite for national development. Realizing the need for quality education, National institute of Open Schooling, the largest open schooling system in the world, has continuously attempted at refining its strategies to provide quality education and cater to the needs of a large scale stakeholders.

This paper discusses various quality practices used in NIOS such as developing course contents both print and online material with focus on media and technological integration, capacity building, research and collaboration with knowledge hubs to achieve overall vision of NIOS, i.e. "Sustainable inclusive learning with universal and flexible access to **quality school education** and skill development." Further, the paper discusses the adoption of various methods adopted by NIOS, such as life skill integration in curriculum and self-learning material and integration of vocational with academic courses etc. to prepare the learners for life as well as livelihood.

2. Quality Education: Conceptual framework

Quality Education (in a holistic, broad sense) is a multi-leveled experiential journey of discovery, expression and mastery where students and teachers learn and grow together. It is a quest for understanding and meaning. Its aim is to nurture healthy, whole, curious persons who can learn whatever they need to know in any new context. It is concerned with the growth of every person's intellectual, emotional, social, physical, artistic, creative and spiritual potentials and aims at integrating/creating balance between knowledge, skills and values.

The Delors Commission Report, UNESCO, "**Education in the 21st Century - Learning: The Treasure Within**" saw education throughout life as based upon four pillars:

Learning to know acknowledges that learners build their own knowledge daily, combining indigenous and 'external' elements.

Learning to do focuses on the practical application of what is learned.

Learning to live together addresses the critical skills for a life free from discrimination, where all have equal opportunity to develop themselves, their families and their communities.

Learning to be emphasizes the skills needed for individuals to develop their full potential.

This conceptualization of education provides an integrated and comprehensive view of learning and, therefore, of what constitutes education quality (Delors et al., 1996). Thus, quality education provided by an institution can be measured at two levels. At the level of the learner, education needs to seek out and acknowledge learners' prior knowledge, to recognize formal and informal modes, to practice non-discrimination and to provide a safe and supportive learning environment. At the level of the learning system, a support structure is needed to implement policies, enact legislation and distribute resources and measure learning outcomes, so as to have the best possible impact on learning for all. On the other hand, quality education can be determined to the extent to measure how education helps in developing cognitive abilities on the one hand and encouragement of learners' creative and emotional development, in supporting the objectives of peace, citizenship and security, in promoting equality and in passing global and local cultural values down to future generations. (UNESCO, 2005)

UNESCO developed a framework of Quality Education, which considers the following five parameters such as:

- Learner Characteristics Dimension
- Contextual Dimension
- Enabling Inputs Dimension
- Teaching and Learning Dimension
- Outcomes Dimension.

Quality is essential for making any educational endeavor (including open schooling) meaningful and worthwhile. It is not an one time affair. In Open schooling, this translates into quality in learning materials, learner support services, etc.

3. Quality ODL System in NIOS

The National Institute of Open Schooling (NIOS) since its inception aimed at providing learning opportunities for all segments of population through ODL mode particularly the children-at-risk those who are socially and geographically isolated, disabled and Girls and women in challenging situation. Education at secondary level of schooling has been the main target of NIOS since inception. At the Secondary and Sr. Secondary levels, NIOS provides flexibility in the choice of subjects/courses, pace of learning, and transfer of credits from other Boards of School Education and State Open Schools to enable learner's continuation. No doubt, providing affordable access to education was the main aim of NIOS. But it has transformed itself into providing quality education to masses through various effective means. Following are some of the strategies undertaken over the years to assure and sustain quality education in NIOS. These considerations will be discussed under the Quality Education Framework of UNESCO.

4. Relevance of Courses & Programmes

Curriculum that caters to the need and interest of the learners increases the possibility of quality learning. There is scope for learner to acquire the knowledge most when they engage themselves as per their time, space and needs and find it relevant to their life relates to their experience. On the other hand, learners also places themselves looking at the outcome of being enrolled in the course. Keeping this in mind, NIOS continuously updates the curricula of various courses and adopts new courses as per the needs of society and nation. Further, it updates the existing courses through addition of new kind of contents within the existing curriculum. NIOS offers 27 subject for Secondary level of education and 25 subjects for Senior Secondary level. Besides these, NIOS offers a choice of 10 Vocational subjects in combination with Academic subjects at secondary stage and 20 vocational subjects in combination with Academic subjects at Senior Secondary level. Recently, new courses like

Introduction to Law and Library & Information Science have been added at the senior secondary level which are academic subjects but also more professional and vocational oriented.

Looking at the cultural and linguistic diversity of Indian Society, the steps are also taken to introduce the courses in regional mediums. Presently, the courses are offered in eight mediums (Hindi, English, Urdu, Marathi, Telugu, Gujarati, and Malayalam) at secondary level and in five mediums (Hindi, English, Urdu, Odia and Bengali) at senior secondary level. Further, while developing the self-learning material, focus is given to provide examples and illustrations from different cultures across India.

5. Quality Self Learning Materials

Developing Self-learning material (SLM) involves a wide range of systems and procedures laid down by the policies and principles of developing SLM. The internal faculty involved in the designing and development of SLM are trained by experts and further, the experts with different kind of specializations involved in writing the SLM are oriented by the internal faculty. The material development strategies include planning and defining the role of each member including Coordinator, authors, instructional designers, editors (content/language), graphic artists, and media specialists etc., laying out the learning outcome of each lesson, sequencing content, developing activities and illustrations as desired for each lesson and writing questions both for formative and summative evaluation. While developing the course material, focus is always on linking content with the learning objectives. Further, the content is designed linking previous knowledge of the learner and his/her socio-cultural background. The subject matter of each lesson is also reviewed by a team of experts, whose role is to see not only the content relevance but also the issue of language, gender and social inclusion concerned with goals of the society. India being a country with wide cultural diversity in language, religion and caste, cultural pluralist approach is followed to represent the culture, norms and values of all social groups.

6. Innovative Practices in Learner Support

Learners in open and distance education often feel isolated and demotivated having less scope for interaction with teachers and peer groups. In NIOS system of education, Self-learning materials are developed in such a manner where the learners can construct new knowledge based on their experience and the context. The learners are provided activities within lessons where they can transfer learning from one situation to another and solve problems from everyday life. Further, personal contact programme sessions are held to remove their isolation and for solving their learning difficulties. During PCPs, 30 theory sessions and 4 sessions for practicals are done in each subject. PCPs focus on Individualizing instruction, providing clear explanation, comprehensive and continuous testing mechanism (through Tutor Marked Assignments), diagnosing learning difficulties, providing constructive feedback. Technology is also used not only to remove physical barriers but also motivational barriers between learner and facilitator. Recently, Mukta Vidya Vani - an interactive web radio was initiated by NIOS, which is podcast live everyday to facilitate interaction between learners and subject experts to clear their doubts and counsel them. Mukta Vidya Vani can be accessed through the NIOS website from anywhere around the world. The programme schedule is displayed on the Mukta Vidya Vani webpage for the reference of learners.

7. Use of Media & ICT (Information and Communication Technology)

NIOS makes extensive use of Media and ICT. Some highlights are:

- An ICT based **On Demand Examination System (ODES)** has been operationalized in the Regional Centres of NIOS. During the year 2012-13, 20,048 learners appeared under ODES. Of these, 6524 learners were certified.
- All study materials are available online in PDF form, which can be used freely, though not for commercial purposes.
- NIOS has a collection of about 350 audio/video educational programmes that are broadcast on “Gyan Vani” and telecast on “Gyan Darshan” Channels. The video programmes have also been uploaded on You Tube. Efforts are on to provide multimedia materials to learners through multiple media.
- In order to help learners, NIOS has introduced a Web Radio with global accessibility in collaboration with CEMCA (Commonwealth Educational Media Centre for Asia). There is a daily schedule of three hours of live Personal Contact Programme (PCP) and six hours of pre-recorded audio programmes that are uploaded on the Web Radio. The Web Radio called Mukta Vidya Vani (Open Education Voice) can be accessed through the NIOS Website nios.ac.in. About 500 live PCPs have been telecast from July 2012 onwards.
- NIOS has developed a MOODLE based VOS (Virtual Open Schooling) Platform for providing online courses. Two vocational courses have already been launched; secondary course will be offered online very soon.
- Teleconferencing is being used for interacting with the Regional Centres, Study Centres and learners.
- Talking Books are available on NIOS website for the convenience of visually impaired learners.
- An NIOS MobileApps has been developed through which all study materials will be made available to learners that can be accessed on mobiles.

8. Integration of Academic Learning with Skill Development

The objectives of NIOS Open Vocational Programme are (i) to meet the need for skilled and middle level human resource for growing sector of economy, both organized and unorganized, (ii) to prepare learners for self-reliance and gainful self-employment, (iii) to attract sizeable segments of population to varied Vocational Education Courses, and (iv) to enhance individual employability by providing professional skills in various vocations. NIOS offers Vocational courses in the areas of Agriculture, Business and Commerce, Computer and IT, Engineering and Technology, Home Science and Hospitality Management, Health and Paramedical etc. The admission in Vocational Education Courses during 2012-13 was 28,035. Of these, 60.20 percent were female learners and 39.80 were male students.

A unique provision is that along with academic courses, learners can opt for one skill based/vocational course at secondary and senior secondary level. This makes education holistic with the integration of academic with vocational courses. Thus, learners are provided education for life as well as livelihood.

8. Life Skills and Value Orientation

As stated in the beginning of this paper, quality education implies Holistic education. Value inculcation and preparation to live a good ethical life is a crucial aspect of such quality education. NIOS has taken care of this by integrating life skills with the curricula and self learning materials. It is said that the self learning materials are teachers in print, as there is no opportunity for regular face to face interaction with teachers. Integrating life skills was a conscious decision for inculcation of values among learners.

9. Flexible, Learner-friendly/Learner-centric Approach for Universal Access

The regular face to face formal schooling system is rigid in terms of entry, pace, place of study, etc. particularly in developing countries like India. The open schooling movement, from one point of view, also got a boost because it tried to do away with the rigidities that the formal system had. NIOS believes in a flexible, learner friendly/learner centric approach for universal access. The flexibilities include:

- Eligibility for admission to secondary is only 14 years of age. An individual, who has undergone home study and so does not have a school certificate of any class, is desirous of studying and gives a self certificate that he/she can study at that level, he/she is allowed to take admission to secondary class.
- In the formal system, there is no choice of subjects at secondary level. NIOS provides the learner an opportunity to choose subjects as per his/her need and interest. Even at Sr. Secondary level, there is no concept of streams. One can opt for any combination of subjects according to need and interest.
- There is a provision of Personal Contact Programme, but at the moment attendance is not compulsory. However, the marks obtained in Tutor Marked Assignments are added in the score obtained in the external examination. This gives an incentive to attend the PCP sessions.
- Five years with nine chances are allowed for qualifying and earning the certificate. Thus one can study at one's own pace and place.
- One can appear for the On Demand Examination throughout the year. There is no limit to number of chances in this system.
- There is provision of transfer of credit for up to subjects from another Board.

10. Challenges and Future Strategies

In developing countries like India, the open learning system is still in the process of being accepted. The mindset of the people in general is that it is an inferior system. This is the biggest challenge. Also, in the open learning system, the mentality is that it is meant for getting the certificate without having to work hard for it. This mentality leads to malpractices, which pose a big challenge.

NIOS has to overcome these challenges through constant advocacy as well as by constantly strengthening the monitoring system.

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THE CONSTRUCTION OF EMOTIONAL SUPPORT SERVICE SYSTEM OF DISTANCE EDUCATION FROM THE PERSPECTIVE OF COGNITIVE THEORY

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Abstract

As one of the important basic theories of modern distance education, the core content of the cognitive theory is to take students as the center, respect the needs of students, emphasize students' active exploration of knowledge and pursue the resonance of teaching and learning under the premise of respecting students' cognitive structure. The biggest difference between distance education and traditional education lies in that the interaction between teachers and students depends on the media technology, and the indirect interaction between teaching and learning leads to a lack of emotional support of distance education. Compared to other support services systems, the study on emotional support system is relatively weak, and is a marginalized problem, which is undoubtedly against the distance education philosophy of "taking students as the center". This paper emphasizes that emotion and cognition are the two basic dimensions for learners to participate in learning from the perspective of cognitive theory. Positive emotions will generate power for the development of cognition and regulate the development of cognitive structure. Combined with the cognitive theory, this paper explores the content and the main components of the emotional support services of distance education. This paper defines the concept of "emotional support service", which is mainly referred to the emotional care provided to solve loneliness, mental health and other problems that the separation of time and space of distance learning brings to the students. Furthermore, it uses the methods of questionnaire and literature research to analyze the current situation of emotional support service in the distance open education and research the present problems. It is believed that distance education is in more need of paying attention to the emotional support and training, because students encounter more and more complex emotional confusion and are more prone to negative emotions than ordinary students in the process of learning. It emphasizes that the establishment of perfect emotional support service system is beneficial to fill "the emotional gap" of distance education and strengthen the humanistic care for distance learners to make the distance learners have higher learning efficiency and stronger psychological sense of belonging. Finally, this paper puts forward the theory strategy of improving the construction of emotional support service system on the basis of respecting the needs of the learners.

Introduction

Perfect learning support service is the core of the distance education quality, good emotional support services is an important guarantee for the quality of modern distance education.

Effect of separation of classroom and campus culture of Distance Education under the environment of distance education is far greater than that of physical separation, lack of emotional information will be on the emotional interaction between teachers and students have a certain impact. A lack of emotional communication between teachers and students cannot give students a sense of belonging.

Emotion as the irrational factors, important in distance education teaching is penetration among cognition, it is in the distance education learning support system within the various elements of infiltration, and purpose is for learners to build a kind of emotional communication atmosphere, emotional care. In the modern distance education, the students embodiment of value, enhance the consciousness of the teacher's support services, to provide our students with emotional communication, is a key to the success of distance education.

Objective of the Study

The author thinks that the cognitive theory of respecting the rule of students' learning, and conforms to the development trend of the modern education theory, the pursue and value idea, a very good interpretation of the characteristics of remote education. This study attempts to through the theoretical research and empirical analysis, under the background of cognitive theory to discuss the connotation of modern distance education emotional support services as well as its main components. And on this basis, the analysis of the current lack of emotional support service, finally put forward to further improve the theory of learning support service system strategy. Purpose is as follows:

1. This article introduce the core idea of the cognitive theory and combining the theory of Michael Moore of learning support services, determine the connotation of learning support services are discussed in this paper and the main factors.
2. Analysis of the status quo of the current remote education emotional support services.
3. Based on the findings of this study, Suggestions to consummate the open and distance education emotional support service system construction theory.

Research Questions

To achieve the study objective, the following research questions are formulated:

1. The cognitive theory of meaning? Cognitive theory guiding significance of open and distance education?
2. The remote education and traditional education in the differences in emotional support.
3. The open and distance education environment analysis of the students emotional needs.
4. The defects of the current emotional support service system.
5. Improve the countermeasures of the theory of emotional support service.

Significance of the Study

In this paper, the remote education research is less involved in emotional support services as the research content, is the important supplement of the research on the current study support service, to improve the quality of modern distance education learning support services provides the realistic foundation.

Literature Review of Emotional Support Service System of Distance Education

Learning support services for the earliest by David West, after the definitions have different explanations and division. Some scholars (Simpson), from the broad range of student support services will be defined as in addition to curriculum resources of production and sent to support and promote the sum of all the activities of student learning; Tate is pointed out that learning is a series of services for individual or group learners. The author tends to Michael Grahame Moore for learning support system concept definition and classification.

Methodology

Questionnaire survey, Theoretical study method Etc.

Discussion

1. *Theory of Cognitive and Emotional Support Services*

The distance education system is the object of education, teaching process, education resources and the concept of open. Specifically, the school gate to the whole society all willing to learn the open; the separation of teaching and learning behavior in time and space, i.e., between teachers and students are generally not performed face-to-face teaching activities. From the characteristics of the above distance open education can be seen, this new type of education to exert their advantage, must have two systems: one is to ensure the services provided by the students. It includes advanced media technology and give full play to the efficiency system of high-quality management personnel; the second is to learn their own learning conditions, learning motivation, learning the workings of the objective rules in learning a, which is the internal factors in the success of learning. The development and perfection of the former is the foundation and guarantee of the operation.

Although domestic and foreign scholars on learning support services this paper emphasis different, has neither theory nor a complete definition, but can be expressed as: to support learning and provide various services.

The author tends to Moore on learning support service theory. Michael Grahame Moore is Professor of distance education at the Pennsylvania State University College of adult education.

Michael Grahame from learning support the point of view of the causes of discusses the connotation of the study support, Moore thinks theory of distance education by the three big system: including the design of teaching and learning materials, production and transmission subsystem; the other subsystems by those with individual students of interaction of the teachers, the teachers help students will learn the material change for their own knowledge. And finally a system is system management, management of the above two systems in a series of activities. If the system always works perfect, flawless, it will not appear the fourth systems, namely the student support system. However, because of the lack of a good system is always running, so it needs the student support system. Student support system is a to encounter unexpected and unusual difficulty on the part of the students to provide support for the system, these problems cannot be curriculum designers, teachers and administrators to predict, or often is these problems despite being predicted, but because they do not know what will happen in which student is unable to prevent. Student support system, does not like design and management system, its main service object is not a student mass, but the individual students, and it will probably special and very important, can not solve this problem will lead students to give up the course of learning, or even withdraw from the learning project.

And Moore thinks supports three types of students: first class for their own problems, is usually caused because the adult learning style. These problems may interfere with the students in accordance with the expectation of the course and required to complete the study; the second class of problems is due to the management system of function execution errors caused by; the third problem definition for emotional problems.

Cognitive education from the earliest to the American children psychologist Level, saying: cognition is the thinking activity of self experience, self observation, self monitoring and self regulating. Extended to instances of education, cognitive education is in respect of the premise of student's cognitive structure, the pursuit of the teaching and learning of resonance, teachers are responsible for guiding the students to make a plan for study, enhance the learning self-consciousness, change "want me to learn" to "I want to learn", let the students autonomous learning, cultivate students' interest in

learning, forming good learning psychology, teachers teach students how to reflect the anatomy of their own learning process, self regulated learning strategies, for solving similar knowledge to provide experience and conducive to the development of thinking ability of teachers, improve teacher itself in teaching reflective ability. That is the core of cognitive education not only the quality education or vocational education, its foothold is the learning needs of students in learning needs as the core.

Emotion is a kind of media and means for the educators to educate and impact on the educates. Centered on the students, distance education should provide students learning support activities, including academic and nonacademic activities, to mobilize the enthusiasm of students, improve the learning efficiency. Moreover, in addition to problems of professional knowledge, the emotional support service is necessary for teachers to encounter the emotional support activity. The personalized affective factors should permeate all types and styles of learning support.

1.1 The difference between distance education and traditional education in the emotional support

To maximize the teaching effect needs to combine the transformation of knowledge and the exchanges of emotions. The success of teaching activities depends on the interaction of teachers and students to a certain extent. Teachers and teaching activities maybe changed by students' behavior no matter this kind of change is encouraging or blamed one which leads the students have a concern of satisfaction.

Psychologically, the students in distance education are different from the students in traditional education. Students of distance education mostly are adult with jobs, with the contradiction of work and study, adult students bear great psychological pressure. Therefore, they need more emotional feelings and emotional exchanges with teachers and other students.

There is no direct communication in the classroom of distance education which shows some temporal separation of learning. What's more, students will questioned this kind of system if they feel lonely, abandoned, and anxious and lack of confidence.

Compared with the mode of traditional teaching, it is inevitable that the emotional interaction between teachers and students can't be so perfect in the distance education which contributes to the lack of a sense of belonging. The key lies in improved emotional support service system to change the situation.

1.2 The analysis of students' need of distance education in open environment

With the analysis of the questionnaire and follow-up interviews for the corresponding opening students of Yunnan opening legal education, I sum up the following requirements:

- 1.2.1 The emotional support is important in distance learning, most students believe that they need teachers (counselor) to provide emotional support to promote their learning, especially for new students.
- 1.2.2 Students with diverse requirements for emotional support. Different gender, different age, different backgrounds of the students on emotional support have different choices.
- 1.2.3 Flexible ways of organization and management. Enrollment, teaching, graduation and other aspects of the information service for students should be timely provided. School should timely release the latest teaching information to enable students to understand the new teaching information by telephone, mail, forum, messages. And the consulting problems of the students should be replied.

- 1.2.4 Timely tracking and feedback to students. Although you can it should be possible to design the human-computer interaction to complete the student support services, and make students obtain more convenient services, reduce the cost of distance education, but the actual situation is not completely remove the interpersonal interaction, there are always unexpected problem is difficult to solve simple rely on machine.

To understand the learning situation of students and help them solve the problems they encountering with, the emotional service is available to stimulate students' learning motivation, the teacher should often keep in touch with the student to show their care by inquiring their learning progress and helping them in time. Moreover, teachers should give a proper evaluation for learning results, making learners feel the emotional care to promote their learning behavior.

- 1.2.5 Online learning platform offered to learners. School should illustrate how to use it, establish a technical support team who is responsible for the various technical problems. When the system in the technical problems, school should promptly notify the student to show their apologies and solve those problems as soon as possible. To convenient for the learners who are not easily access to the Internet, school should also provide services for them, such as computer, multimedia classroom.
- 1.2.6 Psychological counseling Webpage. School should specifically provide counseling Webpage to prevent and treat for psychological problems of learners, and it should also provide advice and assistance to students with mental problems to get satisfied answers by anonymous questions in network.
- 1.2.7 The closed linkage of the students' professional selection and occupation in the future. Schools should hire human resources experts to provide personal occupation career design for students and provide related training and employment guidance service for students' individual development with specialized courses.

To sum up, the author thinks that in distance education, Emotional support service is mainly referred to the emotional care provided to solve loneliness, mental health and other problems that the separation of time and space of distance learning brings to the students, which is mainly composed of campus culture, learning environment, learning community, the construction of virtual campus community, psychological consultation and other aspects.

2. Analysis of status quo distance learning in emotional support service under the open environment
- 2.1 The insurmountable separation of time and space. The separation of time and space of distant distance learning provide convenient to the learners to learn whenever and wherever, but it also derives many problems such as little communication. Learners are in a state of human-computer interaction which is lack of direct contact than in traditional education.
- 2.2 The improper construction of campus culture. The communication between the distance learners needs the remote offices provide a variety of opportunities and convenience. If there is no communication opportunity, there is no emotional expression. The improper construction of campus culture is the reason why communication opportunities are rare. And it may also lies in the lack of organization to provide such as discussion and debate. Supplies theory affordance of the students' learning behavior in addition to the individual cognitive factors and non-cognitive factors, but also affected by the group mind. At present, many of the remote education school by the students list and contact information, set up a study group and other method to establish the collective learning, but poor student collective communication of organizational, communication, communication on narrow content too drab, can not achieve the ideal effect.

- 2.3 Failed to establish emotional support service concept. Since the modern education emphasizes the economic function and is dominated by Educational Utilitarianism, one-sided emphasis on students' cognitive is not only showed in traditional education but also in the current distance education in our country, those education is later to study humanized service in students' emotion.

Therefore, in the distance education, schools should pay more attention to the students' emotional support. There is significant difference between the role of teachers in distance education and traditional education. The development of teachers' role is not to weaken the teacher's role and position, but to put forward higher requirements for teachers.

3. Countermeasures: strengthen the emotional support service theory suggested

- 3.1 Set of cognitive learning education concept, emphasizes the humanities concern of distance education

Modern learning theory, learning is a very complicated psychological build process. In this process, the process of learning is learners to actively participate in and understand the information. This process is not only a process of acquiring new knowledge, new skills, keep must also include the knowledge and skills, in order to effectively migrate at a certain moment in the future, it is using what they learn the knowledge, skills to successfully solve the problem or fast learning ability in the new situation.

Tom perking has pointed out, emotional feelings to play the role of a "zoom in" drive. To cause in the process of motivation, emotion plays a very important role in regulating. In today's strongly advocating quality-oriented education, humanistic education and humanistic care to become the center of all kinds of education content, remote education is no exception. Emphasis on the future learning goal not only cognitive content more is the cognitive ability of culture and emotion.

So to highlight the humanistic care in remote education is indispensable.

- 3.2 A sufficient amount of the emotional service staff and students to interact

Michael Grahame Moore holds the idea that the support system to deal with problems may not affect every student, but on any one student can happen these problems. For student support system, the most important thing is to tell each student they can easily find student support staff. Another important thing is to answer the phone service personnel to provide support to students, make students at ease. The people don't have to know all the solutions to problems, but to "listen" with compassion, and know which consulting experts can answer this question.

American professor Sampdoria thinks that the learning core should embody in the interactive function of teaching and learning. Interaction is critical for students. Therefore, school should provide a relatively relaxed, free and open learning environment for students with a certain number of counselors or service personnel. Those staff can provide similar face-to-face emotional exchanges with students to strengthen communication.

School should ensure that every student can timely understand learning information and requirements of the school with flexibility in school arrangement, examination counseling and group activities according to their working hours. Teachers should give Humanistic care counseling, understand the characteristics of each student in-depth, find students learning difficulties to timely guide and help them to actively participate in the learning community. The exchange of experience between teachers and students should be strengthened to reduce the loneliness. Moreover, self learning management system and self incentive mechanism can be established. Based on the original class, Yunnan Open University specially sets up one-stop service center with the introduction of market mechanism; the

center is mainly responsible for comprehensive consulting services and the tracking of student learning.

3.3 The improved support service to timely reduce the obstacles in learning

Remote learning students can encounter with various difficulties in the learning process, the timely provision of a variety of information and other interactive solutions including telephone, mail, forum, SMS can reduce the obstacles in learning.

3.4 Establish the new teaching idea, to build learning community

Although remote education encourages students to self-study, but learning itself is complex, not loose, the exchange of learning environment, learning is also difficult to sustain. The construction of a learning community for distance education environment, and is helpful to arouse the students' learning motivation of remote conditions.

Interact with students and teachers role as the core is to build the new learning community, learning to the essence of open education may be regarded as a conversation between teachers, students and teachers a process, through mutual communication mode, forming the multi-dimensional understanding of knowledge.

The establishment of learning community can greatly enhance the sense of belonging in the learning. While in the mutual exchange activities, students can gain the respects from teachers and other students which will increase the degree of participation in interactive activities, and help students having learning enthusiasm.

3.5 The construction of virtual campus community

Each class should occupy with topic discussion area, establish organization system by the cultural department, off campus learning center and class, and develop the forum platform in order to promote the learning motivation. It can also meet the students learning psychology and emotional needs of different levels. "Learner centered, all for the learners", and "Church of learning", are the core ideas of open education and the ideas of construction. Listening to the learners' feedback can strengthen the interaction between the learners and remote institutions and the teachers to promote the exchange of feelings. School can set up a dedicated exchange site to let the learners reflect the various problems they encountering. However, the remote institutions and teachers should timely give feedback to those problems.

3.6 The construction of campus culture with all kinds of activities.

Strengthening communication between learners can promote the emotional communication. In the process of teaching, debates and group discussions let learners know each other. On the basis of many organizations, they can slowly building emotional foundation in the future study and help each other to make common progress; when they can not be in real-time synchronous learning, they can exchange in asynchronous communication, such as the creation of a column in the course forum for mutual learning. QQ and Micro message group are means for learners to real-time communication. From the Yunnan open law education organization and implementation effect, the above activities indeed greatly improve the communication between students, conducive to the learning effect.

3.7 Psychological counseling build up.

School can set up psychological counseling column in anonymous way to release the pressure of the learner.

Conclusion

The Theory of Cognitive to construct the student's emotional support service system can overcome a sense of indifference in network education. The construction of learning network to support each other in a better way. Therefore, opening education should attach great importance to the emotional support system.

Admittedly, this is just the author to build long-range education some theoretical Suggestions of emotional support service system, its not long-term practice inspection, part of the theory is not mature, but there's little doubt that the condition of distance education has a lot of potential to be remote education workers to develop and use, as long as we set up the correct theory of the guiding ideology, down-to-earth to combined with the actual situation of distance education in our country to carry out all aspects of the work, must be able to obtain actual effect.

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A COMPARATIVE STUDY OF ASSESSMENT TECHNIQUES USED IN MALAYSIAN OPEN DISTANCE LEARNING INSTITUTION AS COMPARED TO AN INTERNATIONAL PROFESSIONAL BODY

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Abstract

This paper looks at the assessment practices of a Malaysian Institution of Open Distance Learning as compared to an international professional accounting body from the United Kingdom. This is a case study that compares the assessment methods of two institutions that offer accounting qualifications in the distance learning mode. The University of our case study offers accounting programs in the Open Distance Learning mode. The programs currently are only to be taken by Malaysian or foreigners who are currently in residence in Malaysia. The professional body in our case study is a British professional accounting body and also an examination body. Although headquartered in the United Kingdom, the institute has member (including student members) from around the world. Parker (2005) in his doctoral thesis cited (Forest & Keith, (2003)'s need for assessment is the result of sound planning, proper training, multiple tools, scientific analysis, as well as practical utilization of the results for improvement of the program. The entire procedure is founded upon a clear set of goals and objectives to be accomplished in the area or item to be assessed. Parker stresses the importance of assessment as a means of collecting institutionally relevant information. We reviewed the assessment techniques of both bodies using Forest & Keith's and Tinn's criteria. In this paper we look at how question papers are set by both institutes, how there are similarities and differences. Assignments are a key component in the university while a practicum report is a key component in the professional body. We look at how questions are chosen for an examination and how the questions are vetted. We looked at how examinations are administered. The university would have its examination only in one time zone while another would have examination centres in different time zone. Finally, we look into examination script moderation of both bodies.

Key words: *Assessment, Distance learning, Quality Control, Operations*

Literature Review

Parker (2005) in his doctoral thesis cited (Forest & Keith, (2003)'s need for assessment is the result of sound planning, proper training, multiple tools, scientific analysis, as well as practical utilization of the results for improvement of the program. The entire procedure is founded upon a clear set of goals and objectives to be accomplished in the area or item to be assessed. Parker stresses the importance of assessment as a means of collecting institutionally relevant information.

Pittaway and Edwards (2012) observed that in the instruction of entrepreneurship the approach is still very traditional i.e. learning outcomes that were "knowledge based". Very few instructors, focused on learning outcomes that acquire knowledge "About" the subject. In the professional examinations, the focus is on knowing and applying the material. The professional bodies have started to test accountancy using the "open book" system whereby the focus is on how accounting students apply their knowledge to a given scenario rather than the "knowledge" of a certain accounting standard.

Dunaway and Orblych (2011) noted that the process of integrating formative assessment (i.e. a final examination) into any instruction would enable instructors to enhance their understanding of students' existing skills, and to adjust the content of instruction sessions to be more practical and relevant for students. By acknowledging the potential of formative assessment to improve instruction and students' information literacy skills, instructors would strengthen their role in the ongoing processes of understanding and improving student learning. This form of assessment is very common in the presentation of accounting courses in university. A university lecturer would set his final examination based on what he taught in class. This luxury is not available in professional examinations as students would expect anything which is in the syllabus to be tested.

Bamford, Karjalainen and Jenavs, (2012) stated that the increased need for practical relevance by stakeholders in management education have inspired business schools in operations management to adopt Problem Based Learning (PBL) when teaching operations management. However current student assessment using this approach were more towards Problem-based assessment (PBA) with a traditional final exam. Groupwork PBA provides a better learning experience for the students, but it is a worse classificatory of student results than the conventional exam. As for costs, PBA was found to compare reasonably well against other forms of continuous assessment, although more expensive than an exam. The current practice of professional examinations assesses how well students apply the theory and framework in the course in one summative examination. The Malaysian Institute of Accountants, the official statutory body in charge of the accounting professional in Malaysia, has a different approach whereby they planned a Qualifying Examination (QE) examination that blends both formative and summative examinations like how is practiced in universities.

Raine and Rubienska (2008) was of the opinion that despite the claims made about the developmental objectives of management programmes for mid career public managers, mostly, the assessment processes tend to accord with traditional academic perspectives, and give only limited weight to learning and skills for the workplace. With this argument in mind, the Malaysian Qualifying Agency stresses on the importance of soft skills in any approved courses. The assessment in most professional accounting bodies tend to stress on application at work rather than an academic discourse of the course.

Methodology

This comparative study is qualitative and descriptive in nature. One distance learning institution of higher education which offers the accounting programme will be chosen. The researcher would choose one international professional accounting body that sets their own examination papers. The researcher would peruse documents pertaining to assessment and/or interview key personnel in charge of assessments in both chosen institutions. The study will compare programme learning outcomes of both institutions; compare the formative and summative assessments of both institutions. How examinations are set, the administration of the examination and the marking process are compared.

Learning Outcomes

The learning outcomes of the university programme are as follows:

1. Identify and solve accounting problems facing companies and organisations.
2. Apply their knowledge and skills in business decision making relating to accounting principles and operations.
3. Explain and apply the rules and standards governing conduct in accounting and auditing.

4. Apply theories and techniques within the fields of financial accounting, management accounting, auditing, financial statement analysis, accounting information systems and taxation.
5. Discussion and observations on current issues and development in the critical areas of business and accounting.
6. Assess and address legal and ethical issues in management.

In pursuance of Malaysian Qualifying Agency requirements, the programme learning outcome must be published as a matter of public record.

However the professional body does not publish a set of program learning outcomes but a technical knowledge grid. The grid comprises the students' ability and performance in seven key as follows: adding value; communication; consideration; decision making; problem solving; team working; and technical competence. There is no requirement for the professional body to publish a set a programme learning outcomes as the recognition of the professional qualification does not lie with the Malaysian Qualifying Agency. The recognition of the professional qualification is governed by the Malaysian Institute of Accountants (MIA) under Sections 14 and 15 of the Accountants Act 1967.

Formative Assessments

The university system in Malaysia practices a coursework and final examination methods of assessments. Malaysian Qualifications Agency (2013) in their "The Programme Standards: Accounting" document requires to the assessment of a course to cover both "formative" and "summative" assessments. Formative assessments include coursework – assignments, quiz, case analysis; projects – individual / group, accounting / audit software, analysis of annual reports; and others – class participation, group activities, presentation, industrial training reports, and simulation activities. "Summative" assessments are final examinations. In the chosen university of this case study, 'assignments' are considered as the formative section of assessment. As most of the students who enrol in the Online Distance Learning programme are working adults, the university does not require students to take a "practicum" course, which the assessment would be the industrial training report.

There are no formative assessments in the examinations of the chosen professional body. The only form of assessment close to that is the "practicum" requirement of the professional body. All students must sign up for a training agreement. The training agreement can last between three and five years. The student would have to record at least 450 days of practical work experience. The requirement of the need for professional bodies to have the "practicum" properly recorded resonates the view made by Raine and Rubienska (2008) whereby the writers stated clearly the importance of learning for the workplace.

However the Malaysian Institute of Accountants have come up with an assessment scheme which has both formative and summative assessments in them. This is different from the assessments of most professional bodies. This method of assessment is in line with Dunaway and Orblych (2011) and Bamford, Karjalainen and Jenavs, (2012) who believe that the process of integrating formative assessment (i.e. a final examination) into any instruction would enable instructors to enhance their understanding of students' existing skills. Below is an extract of Examination Guidelines for the MIA qualifying examination (QE):

- 4.1 *The candidates are required to undertake the MIA QE Assessment which comprises of workshop evaluation and final examination. For the workshop evaluation, candidates are required to attend a series of workshops for each paper registered.*

- 4.2 *The workshop evaluation may be in the form of quizzes, assignments, group project paper, presentation and any other forms of assessment as decided by the Examination Committee.*
- 4.3 *The candidates must obtain at least 50% of the final examination marks.*
- 4.4 *The passing mark for Qualifying Examination is 50% for each paper based on summation marks obtained from the workshop evaluation and final examination.*

The Examination Setting Process

In the setting of examinations by the university and the professional body, the examiners will first refer to the learning outcomes of the course to be examined. For the professional examination, the examiner will base his questions on the study manual, mock examinations, on-line resources and question bank of the body before deciding which questions to use. Since the professional bodies practice an open book test for their examination, the examiner must make sure that an element of speed test is included in the examination. The university examiner uses a similar approach to questions setting. He will refer to the study materials of the university before choosing his questions. However the university does not practice an open book policy, so he must make sure that enough information is given to the student in the appendix of the paper.

The examination setting process of the professional body would start off with the examiner drawing up the examination focus for the sitting. The examiner reviews his plan with a reciprocal examiner and the moderator of the sitting. The reciprocal examiner and the moderator are fellow academicians employed by the institute. The examiner will note the feedback for his fellow colleagues and will then start to prepare his questions for the examination. Upon the completion of the first draft of the examination paper, the examiner will send his paper to the moderator who in turn will review the prepared paper. The paper is reviewed again by a senior moderator and a reciprocal moderator.

Unlike the examination setting process in a university, the professional body would ask a student moderator to review the paper. A student moderator would be one candidate who has recently passed his professional examinations. The benefit of having an examination vetted by a student moderator is that the examiner could gauge whether the paper is suitable or easily understood by a student. As the examination is taken by overseas students whose first language is not English, vetting by a student moderator is useful. The paper is then passed to an examination review board for a final round of vetting. Only then would the papers be approved for printing.

The examination setting process of the university is slightly simpler. Examiner will draw up the examination focus for the sitting. He will have to match his questions to the programme learning outcome and learning outcome of the course when choosing his focus. The examiner would then prepare his questions. He must make sure that the format of his question paper would fulfil the programme learning outcome and learning outcome of the course and in accordance with the examination format set by him in the specimen examination paper. The specimen examination paper is normally published by the examiner to the students at the start of the semester. The draft examination paper would be presented to the cluster members of the accounting, the dean and deputy dean who in turn will review the prepared paper. Cluster members are members of the faculty who teach similar or related courses to the course in review.

To make sure that the quality of the paper is comparable to peers in other universities, the paper is reviewed again by an external examiner. An external examiner is a moderator from another university who is familiar with the course in review. The university would insist that the external examiner be someone having an associate professorship and is someone who currently teaching a similar course at his university. Only then would the papers be approved for printing.

The Examination

The geographical coverage of examination centres differ. As the professional examination allows students from around the world to sit for the examination, examination centres are opened not only all over the United Kingdom but also in China, Malaysia and India. As the university is only licensed to offer courses to Malaysians, the examination centres are in the regional offices in Penang, Kuala Lumpur, Ipoh, Johor Bahru and Kuching. However there have been requests for students who live overseas to take their examination overseas. The British Council will be the venue for such requests. In both examinations, students will answer their examination on answer booklets. After the examination has ended, the examination centres will scan each completed answer booklet into the examination database for the professional examination. The original copies will be sent back by post to London. For the university examination, the examination centres will courier the scripts to the Examination Unit in Penang.

The Marking Process

For the university examination, the examination unit will forward the scripts to the course coordinator of a relevant course. The course coordinator would mark the scripts himself or allocate external markers to mark the scripts. The markers would either be current tutors or tutors who have previously presented the course. Based on a marking scheme created by the examiner, the marker will mark in red ink on the physical script.

To ensure that the marking of the scripts are fair, 12 or 5% of the scripts will be picked for moderation. The moderator would be a university official other than the script marker. The tolerance level for script marking is ± 5 marks of the original score of the script marker. If the moderator found that the samples are marks away from the tolerance level, the moderator may recommend a third person to remark all the scripts again. The marker would mark those scripts in green. In this system the moderator could see what the marker has marked earlier.

For the professional examination, as the amounts of scripts are massive and candidates are spread round the world, the marking is carried out on-line. The marker will mark on scanned scripts. The scripts are allocated to markers randomly. The markers cannot tell whose script they are marking or from where it came from.

To ensure that the marking of the scripts are fair, the examiner and moderator will each carry out sample marking. The scripts are compared and an adjusted mark plan is prepared. The marking team will meet and discuss the adjusted mark plan. The markers will remark the three chosen scripts done by the examiner and moderator on line. The markers have no idea what are the marks given by the examiner and moderator. The results are compared. Only the markers which come close towards the marks given by the examiner and moderator will be invited to mark the scripts.

To deal with borderline passing cases, the examiner and moderator will remark all scripts scoring 53, 54 or 55 marks. It is the marks of the examiner and moderator that will be taken as the official marks for the borderline cases.

Discourse

It would certainly be unfair for this researcher to determine which examination which examination setting process is superior to the other. Both examination bodies have to look at the number of students taking the examination. As the professional bodies have centres around the world, the body must make sure the examination is easily understandable towards students from various countries. Questions which are very British-centric should be avoided. Thus with the rigorous vetting of the examination papers with peers, former students and board member, the professional body could ensure the universality of the question paper itself. The examination setting process of the university is less complicated as the students taking the papers are not as diverse as the students sitting for the professional examination. The university students are either Malaysian or Malaysian living abroad. It would be normal if the paper have a strong Malaysian feel to it.

The integrity of the collection and marking of the answer scripts are also just as important. As the professional body has examination centres across the globe how the papers are sent to the examination centres are important. The body must make sure that papers in on centre are not leaked to the students in another centre. The examination coordination for the university is less complex as all papers are revealed to the students at the very same time. The professional body requires the examination centres scan the answer script for security and logistic matters. The sending of answer scripts to markers via an electronic system is faster and safer than sending answer scripts around the world to markers. Collection of completed scripts is easier.

What impressed me is the way moderation is performed by the professional body. The moderator is blind towards the marks given by the marker, thus a more efficient and effective way of moderation. Perhaps the university could improve their moderation system by giving the moderator a photocopy of an unmarked script rather than a marked script. By knowing the actual marks given by the marker, the moderator could be tempted to follow closely to marks given by the marker.

However I find the way the professional bodies deals with borderline passing cases to be kind of strict. The professional body can ignore the marks given by the marker if the examiner and moderator feel that the student has scored lower than the original marks given by the marker. This would result in a greater number of failures.

End Note

Parker (2005) stresses the importance of assessment as this is a means of collecting data from the students on their competencies. Whether it is professional bodies or the universities, assessments are the best way for the organisations to gauge who competent their students after going through their training. How rigorous the assessment is by the organisation who reflects in the quality of the students facing employment.

The accounting professional thrives today thanks to the good work of the professional bodies and universities. The rigor of assessments in accounting examinations is well known. The discipline needed to pass the examinations is reflected in the detailed work accountants do for their employers and clients. To the professional bodies and the universities, I say job well done!

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Dedicated to Janet, Lady Edith, Kimmie and Robbie. Thank you Mr Lim Peng Keat for proof reading this paper.

SERVICE QUALITY AND STUDENT SATISFACTION IN OPEN DISTANCE EDUCATION IN SRI LANKA

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Abstract

Open distance learning (ODL) programs are extensively developed in line with the increasing demand in numerous fields of studies. Retention of students in educational institutions which offer the open distance education is also a widely discussed topic in the present world. The famous service quality (SERVQUAL) dimensions will support to assess the student satisfaction through the service quality and reduce the attrition or increase the persistence of the students from their learning environment. The purpose of this paper is to examine the perceived service quality which will affect student satisfaction. The independent variable was "Student Perceived Service Quality" which was measured by the modified SERVQUAL instrument which consists of five dimensions: Assurance, Empathy, Reliability, Responsiveness, and Web Site Content. The dependent variable was the Student Satisfaction. The population of this study was all under graduate students who have registered for academic year 2012/2013. The valid sample of the study was 244 students who have more than one year learning experience and attending day schools in week ends in Open University of Sri Lanka (OUSL) covering island wide four regional centres. Data were collected through a questionnaire administered survey. Stratified sampling technique was used in this study. Primary and secondary data sources were used to align the research analysis. Exploratory factor analysis and Cronbach alpha test were done for Reliability analysis. Descriptive statistics and Spearman correlation analysis were used as data analysis methods. Results of descriptive statistics revealed that 68% of the respondents agreed that Assurance of the service quality of the open distance learning supports student satisfaction. 13.9% of them were disagreed. 40.25 % of them were agreed with the Empathy. 42.7%, 46.7% and 35% of them were agreed with Responsiveness, Reliability, and Web Site Content respectively. Spearman correlation revealed that there is a positive (0.388) and significant ($P = 0.000$) relationship between students perceived Service Quality and the Students satisfaction. It is concluded that there is a relationship between students' perceived Service Quality and the Students' Satisfaction in the Open distance learning environment. It is recommended to select more variables and to increase the sample size for more accuracy in future study. The implications of this study will contribute the management in order to formulate practical guidelines and necessary strategies for the university to improve the service quality.

Key Words: Open distance Learning, Satisfaction, Retention, Service Quality

Introduction

"Education is a service with multiplicity of student interactions over time and across multiple touch points" (Shaik, Lowe, & Pinegar, 2006). Applications of new technologies and various modern methods in education have progressively developed over the decades. Distance education also plays a major role in modern teaching and education environment.

The person who wish to study with distance education environment can enroll without time and space barriers (Yener, 2013). Unique features of contextual and operational in academic and social environments of Open Distance Learning (ODL) illustrate the difference between traditional and ODL educational environments (Chakuchichi, 2011). Since the ODL provides different environmental requirements and expectations, a vast population have the opportunity to occupy in open distance learning (Dursun, Oskaybaş, and Gökmen, 2014).

The delivery of a quality service in teaching must be supplemented by consistent quality student supported services which drive to success and completion of student programs (Shaik, Lowe, and Pinegar, 2006; Dursun, Oskaybaş, & Gökmen, 2014). Delivering a quality service is also a challenge to the higher education institutions. “Each of the student brings a unique sets of needs to the institution and seeks integration in an individual way” (Peterson, Kovel-Jarboe, and Schwartz, 1997). The quality initiatives and favourable quality experience have the power to expedite academic and social assimilation which could be affect the decision of student persistence or departure.

Perceived quality would influence the student post enrollment communication behaviour (Athiyaman, 1997). In 1995 Parasuraman, Zeithaml, and Berry have conceptualised a gap model for Service Quality with ten number of dimensions and in 1988 they have introduced five item scale (SERVQUAL) as a scale for measuring consumer perceptions for perceived service quality. It was consisted with the dimensions of Assurance, Responsiveness, Empathy, Reliability, and Tangibility. They have further instructed that it would need to be customised depending on the requirements of the industry or service organisations.

Open University of Sri Lanka (OUSL) is the unique university in Sri Lanka which provides ODL programs to the students who wish to obtain their higher education in ODL mode. The Regional Educational Services (RES) division of the university facilitates the delivering of ODL programmes through eight regional centers and eighteen study centers spread over the island.

Problem Statement

It is noted over the years that the proportionality between graduation rate and student enrollment rate in OUSL is degraded showing high student dropout or attrition rate resulting low graduation rate with increasing of student enrollment (Statistical Handbook – 2013, 2014; Strategic Management Plan 2015 – 2020, 2014).

As the university provides multiple services in an ODL environment characterized by absence of face to face traditional education system (Moore & Kearsley, 2011; Simpson, 2013), it is important to study the association between the student perceived service quality and student satisfaction towards student's retention and completion.

There is a critical link between student retention and perceived service quality of the ODL environment (Chakuchichi, 2011; Peterson, Kovel-Jarboe, & Schwartz, 1997). The quality factors intensely effect the educational progress of students would perform favourable perceptions through quality experience which will to lead to the decision of persistence (Chakuchichi, 2011).

Literature gives various reasons for this degradation in ODL environment (ARIADURAI & MANOHANTHAN, 2008; De Zoysa, Munasinghe, Seneviratne, & Mukunthan, 2011; Ismail, August 1997; Munro, 1987; Lekamge, Ranawake, Gunaratne, & Jayananda, 1999; TINTO, 2006-2007). The researchers have empirically proven that the service quality provided by the institution could lead to the student satisfaction or dissatisfaction (Jurkowitsch, Vignali, & Kaufmann, 2006; Machado-Da-Silva, Meirelles, Filenga, & Filho, July 2014; Mantovani, 2012; Udo, Bagchi, & Kirs, 2011).

This research would find the association of Student Perceived Service Quality and Student Satisfaction in ODL in OUSL based on constructs developed by Stodnick & Rogers, 2008 and Udo, Bagchi, & Kirs, 2008, 2011.

Research Question

Based on the service quality literature, the dimensions of modified SERVQUAL; Assurance, Empathy, Reliability, Responsiveness, and Web Site Content which could be considered to develop research questions to test the association with Student Perceived Service Quality and Student Satisfaction in ODL (Mantovani, 2012; Stodnick & Rogers, 2008; Udo, Bagchi, & Kirs, 2011).

The Research question of the study is;

Is there any association between perceived service quality and student satisfaction in ODL at OUSL?

Objective of the Study

To find the association between students perceived service quality in ODL and their satisfaction in OUSL.

Significance of the Study

The results of this study would provide vital information which was given by the students in assessing the quality of service delivered by the institution and their satisfaction with the institution. It would guide academic, administrative and Policy makers to develop strategic plans and arrangements to denote high quality service to ODL students to obtain more beneficial path to their learning journey while competing with the other higher educational institutes. This would be led to student persistence, satisfaction, and completion of their registered programmes within the given time frame.

Literature Review

The service quality concept was originated in service marketing environment but gradually it has come up to the service industry as well as in educational environment. Since the education is a long-term service it is very important to study the facts associated with service quality and student satisfaction.

Service Quality

The service quality is defined as “judgment or attitude relating to the overall excellence or superiority of the service” (Parasuraman, Berry & Zeithaml 1988; Yap, Timbrell, Gable, & Chan, 2007). In 1995 Parasuraman, Zeithaml, and Berry have conceptualised a gap model for Service Quality with 10 number of dimensions and in 1988 they have introduced 5 item scale (SERVQUAL) as a scale for measuring consumer perceptions for perceived service quality. It consisted with dimensions of Assurance, Responsiveness, Empathy, Reliability, and Tangibility. They have further instructed it would need to be customised depend on the industry or service organisation. Grönroos (1984), based on the “perceived service quality model” which consisted of three dimensions; functional quality, technical quality, and image. The image of the organization considered as the positive or negative customer perception of service quality. Carman (1990) empirically tested SERVQUAL in four different industries and confirmed that dimensions were not extensive enough to cater for the prerequisites of all industries and the wordings and the subject of some individual items need to be changed to adequately support for the each service settings.

In 1997 Athiyaman has given a definition for perceived service quality as an overall evaluation of the goodness or badness of a product or service. For this study the definition for Perceived service quality is based on Stodnick and Rogers, 2008 as interaction between student and service Organization. Stodnick & Rogers, 2008 have applied the SERVQUAL scale to traditional classroom environment as a innovative approach and tried to bridge the gap in the education environment for a well-validated and widely used service quality constructs to evaluate the student perceived service quality. In 2011, Udo, Bagchi, and Kirs has empirically presented the modified SERVQUAL constructs by replacing the “ Tangibility “ dimension with “ Web site content “ (Udo, Bagchi, & Kirs, 2008) by giving more significance to the e-learning environment in distance education.

Service Quality and Student Satisfaction in Higher Education

Student satisfaction is defined for this study Based on Udo, Bagchi, and Kirs, 2011, as “overall assessment of the student learning experience”. Stodnick & Rogers, 2008 have used SERVQUAL to a traditional classroom in the U.S.A and revealed Empathy, Reliability and Assurance dimensions were positively related with student satisfaction with their course and instructors. In 2008 Hasan, Ilias, Rahman and Razak have examined the relationship between SERVQUAL and students satisfaction in two universities in Malaysia and found that all 5 dimensions were positively significant with student satisfaction. Wei and Ramalu in 2011, have examined the relationship between service quality and student satisfaction in university of Malaysia using SERVQUAL instrument and found Responsiveness, Assurance and Empathy were significant with the student satisfaction. In 2014 followed the same procedure by Mansori, Vaz and Ismail for the private universities and colleges in Malaysia and revealed Tangibility, Empathy, and Responsiveness were significant with student satisfaction.

In 1997 Joseph & Joseph have examined the determinants of business students’ perceptions of service quality in education in New Zealand. The findings were revealed career opportunities, programme issues, cost and time, physical aspects, location, and other were most significant factors with the service quality. Chakuchichi in 2011 has studied the connection between quality of service delivery, learner support and student retention targeted of current students of the Zimbabwe Open University in all regions and all faculties. Athiyaman in 1997 has empirically proved the importance of service quality in higher education with 8 independent variables which could comprise satisfaction or dissatisfaction.

Service Quality and Students’ Satisfaction in ODL

In 2011, Udo, Bagchi and Kirs have proposed a modified SERVQUAL model to evaluate e-learning quality in distance education with five dimensions: Assurance, Empathy, Responsiveness, Reliability, and Website Content. It has found four independent variables were significant except Reliability with perceived e-learning quality. And has found positive association between students satisfaction and perceptions of e-learning quality. Followed by the same dimensions in 2012, Mantovani has empirically proved the dimensions of Assurance, Reliability, and Website content have a significant role in assessing perceived service quality in distance education. Further more Mantovani has found there was a positive relationship between perceived quality and student satisfaction.

It could be concluded, in higher education environment as well as other industries and service organisations have extent literature based on well known SERVQUAL constructs. In ODL environment which is mainly based on instructional and technological approach the application of modified SERVQUAL instrument also applied few in other countries. And also it is hard to find in Sri Lanka. This research would be bridge the gap of this application which would be resulted to understand the association between perceived service quality and the student satisfaction in ODL environment in Open University of Sri Lanka.

Methodology

The Conceptual Frame Work

The constructs mainly based on Mantovani (2012), Stodnick & Rogers (2008), Udo, Bagchi, & Kirs, (2008, 2011). The independent variable was student Perceived Service Quality which was measured under five dimensions; Assurance, Empathy, Responsiveness, Reliability and Web Site Content in ODL at OUSL. The dependent variable was student satisfaction would be measured by direct relationship with Student Perceived Quality. The definitions of the 5 dimensions and number of questions used in the questionnaire for each constructs were tabulated in Table 1 which were based on (Parasuraman, Zeithaml, & Berry, 1988; Yap, Timbrell, Gable, & Chan, 2007; Udo, Bagchi, & Kirs, 2011).

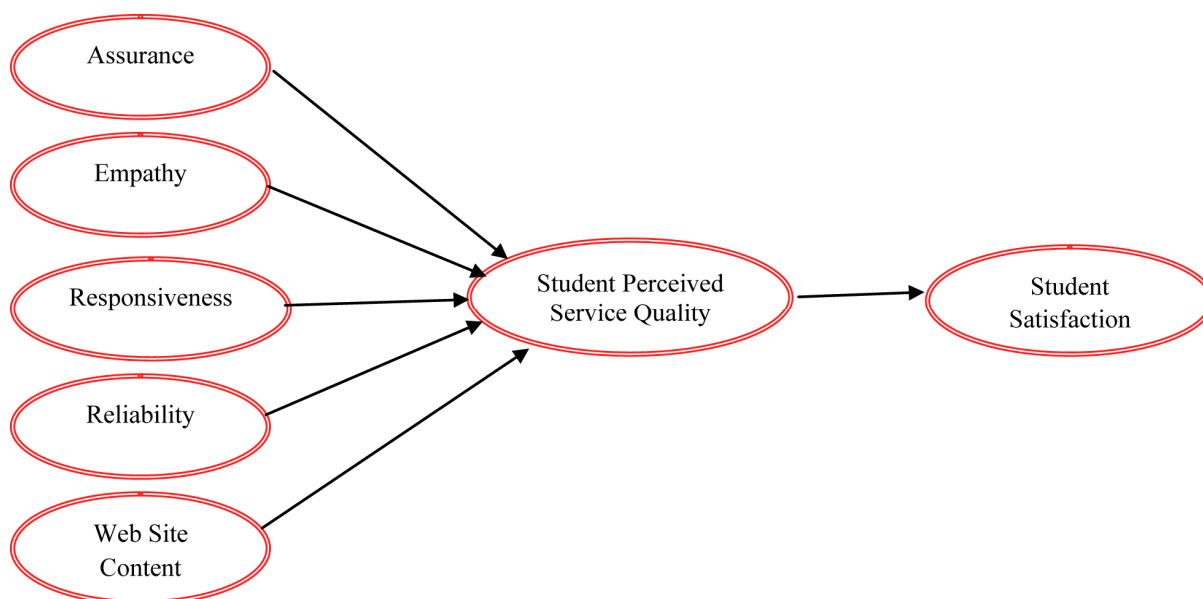


Figure 1: Relationship between Student Perceived Service Quality constructs, Student Perceived Service Quality and Student Satisfaction in ODL

Table 1: Definitions of Constructs and Number of Questions in the Questionnaire

Constructs	Definitions of Constructs	Number of Questions
Assurance	The knowledge and courtesy of staff and their ability to inspire trust and confidence for the students.	7
Empathy	Caring and individualized attention that the university provides to its students.	6
Responsiveness	Willingness to help students and provide prompt service.	6
Reliability	Ability to perform the promised service dependably and accurately.	6
Web site content	The presentation and layout of information and functions that capture the overall firm presence and its public image.	8
Student Perceived Service Quality	Reflect overall perceptions of quality, clarity of instruction, and functionality of the features on the website.	3
Student Satisfaction	Assessment of the student's distance learning experience, including overall pleasure and satisfaction with the service received.	9

Hypothesis of the Study

The following hypothesis was tested.

- H₀: There is association between perceived service quality and Student Satisfaction in ODL in OUSL
- H₁: There is no association between perceived service quality and Student Satisfaction in ODL in OUSL

Research Sample

The target population was mainly based on undergraduate students of the university in year 2013 who is having more than one year learning experience within the university premises. The target group was selected from the four main Regional Centers (RC); Colombo, Kandy, Matara, and Jaffna depend on student population. Four RC were selected representing main provinces of the country and based on maximum number of students. Stratified sample technique (Mantovani, 2012) was used to derive the sample and the target population was 16577. The sample size was determined as 377 based on Krejcie and Morgan (1970).

Instrumentation and Data Collection

Primary data collection was mainly based on method of survey with self-administered questionnaire. The questionnaire was mainly consisted with two sections. Section 1 comprises with demographic factors, section 2 consists with measurement of the 5 service quality dimensions, Student Perceived Service Quality and Student Satisfaction in ODL environment. The measurement scale would be ordinal and Likert scale 1 through 5; strongly disagree to strongly agree would be used. The instrument was mainly based on literature and minor modifications were made to reflect ODL environment (Aghamolaei and Zare, 2008; Ali and Ahmad, 2011; Gruber, Fuß, Voss, & Glaeser-Zikuda, 2010; Joseph and Joseph, 1997; Mantovani, 2012; Rahim-Khanli, Daneshmandi, & Choobineh, 2014; Udo, Bagchi, and Kirs, 2011; Yang & Peterson, 2004). Data collection would be done through a survey with self-administered survey questionnaire during day schools in the weekend using random sampling (Chakuchichi, 2011; Murray & Howat, 2002).

Data Analysis Procedures

To test the hypotheses it is needed to measure the variables accurately. The measurements could be accomplished through direct and indirect methods. There would be discrepancy with actual and measured known as “measurement error”. One way of minimizing the errors would depend on properties of the measurements. The Validity is the first property which must measure what it was designed to measure. Reliability is the second one whether an instrument could be interpreted reliably through different settings (Field, 2009).

Data analysis mainly based on pre and post reliability and validity tests. Post and the pretest of the reliability and validity tests would be done for more robust results (Hasan, Ilias, Rahman, & Razak, 2008). In order to determine the internal consistency of applied SERVQUAL scale, reliability analysis was performed and Cronbach’s alpha coefficients were determined (Fields and Bisschoff, 2014).

A correlation coefficient enables to detect the strength of the linear relationship between ranked or numerical variables. The correlation between +1 and -1 is explained in the Figure 2. (Saunders, Lewis, & Thornhill, 2009, pg.459).



Figure 2: Values of the correlation coefficient between +1 and -1

Source: Saunders, Lewis, & Thornhill, 2009, pg.459

The Kaiser-Meyer-Olkin (KMO) measure is used to measure the sampling adequacy. “The KMO values greater than 5 is barely acceptable, values between 0.5 - 0.7 are mediocre, values between 0.8 - 0.9 are great and above 0.9 superb” (Field, 2009).

The Cronbach’s alpha values more than 0.6 are well, below that are considered poor, in 0.7 range are acceptable, and those over 0.8 are good (Sekaran & Bougie, 2009).

When the independent and dependent variables are categorical or non-normally distributed have to use Spearman’s rank nonparametric correlation (Field, 2009, pg.179-180 ;Saunders, Lewis, & Thornhill, 2009,pg.461). The Descriptive analysis and inferential statistics will be used for analysis of data. Inferential statistics consists with spearman rank correlation to predict the association of variables. Minitab and SPSS software packages would be used for the data analysis.

The Anderson-Darling test statistics is used to determine the distribution of a specific data set whether they meet the assumption of normality test. If the p-value is less than a selected alpha (usually 0.05 or 0.10) then it could not follow the parametric approach and has to follow non parametric approach (The Anderson-Darling statistic, 2015).

Data Analysis

Profile of the Respondents

The numbers of valid respondents were 244 rating 61% of the sample. Most of the respondents were male by representing 64.8%. The center wise representation of respondents rates were; Colombo 48%, Kandy 13.9%, Matara 19.7% and Jaffna 18.4%. The maximum number of respondents were recorded from the age 20-25 of 77% and 0.8% of age Less than 20, 12.3% of age 26-30, 8.2% of age 31-40 and 1.6% of age 41-50 years respectively.

Pilot Test

The purpose of the pilot test is to clarify about the questions in the questionnaire would have no longer problems when answering by respondents and recording the data. In addition the assessment of questions could be obtained through the validity and reliability tests. The primary analysis of pilot data would ensure the answers of the investigated questions (Field, 2009,p.394).

Pre-testing of Questionnaire

The Pre-test of the pilot test was done with 50 numbers of students and tabulated the results in Table 1. The Cronbach-Alpha (Nunnally, 1978) and KMO values have acquired the standard.

Table 2: Pilot Test Data- Pre-test

	Assurance	Empathy	Responsiveness	Reliability	Web site Content	Service Quality	Satisfaction
Cronbach-Alpha	0.746	0.766	0.816	0.732	0.807	0.775	0.899
KMO value	0.703	0.718	0.789	0.630	0.786	0.621	0.828

Post Test

For this study 244 of survey data in Table 1 and all Cronbach-Alpha values of the constructs were more than 0.71 and can be considered as acceptable level (Nunnally, 1978) . The KMO values of the survey constructs which were more than 0.75 considered as good.

Table 3: Reliability and Validity test results

	Assurance	Empathy	Responsiveness	Reliability	Web site Content	Service Quality	Satisfaction
Cronbach-Alpha	0.715	0.836	0.848	0.769	0.873	0.762	0.726
KMO value	0.759	0.808	0.872	0.807	0.840	0.680	0.832

Graphical Summary

Summary of Students Perceived Service Quality (Figure 3)

The median of the responses are 3.0000 (95% confidence intervals of 3.0000 and 3.0000). The first quartile is 2.0000 and third quartile is 4.0000. Significance level of 0.05, the Anderson-Darling Normality Test the P-Value was less than 0.005 indicated that the Students Perceived Service Quality data do not follow a normal distribution. If p-value is lower than pre-determined level of significance it could not follow parametric approach (The Anderson-Darling statistic, 2015).

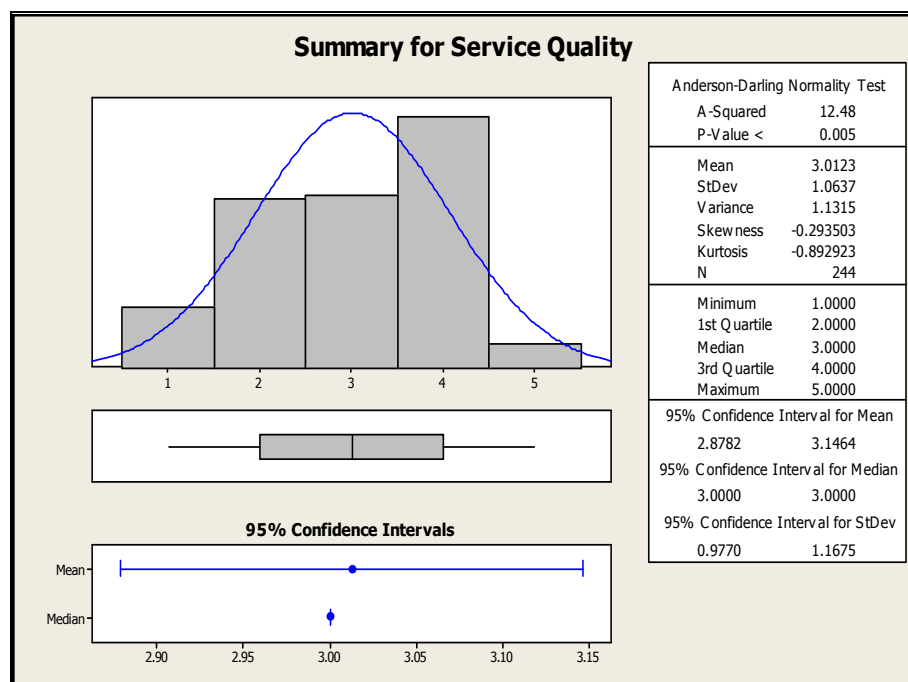


Figure 3: Summary of Perceived Service Quality in ODL in OUSL

Summary of students Satisfaction (Figure 4)

The median of the students Satisfaction is 4.0000 (95% confidence intervals of 3.0000 and 4.0000). The first quartile is 2.0000 and third quartile is 4.0000. The Anderson-Darling Normality Test the P-Value is less than 0.005 indicates that the Students Perceived Service Quality data do not follow a normal distribution. Then it could not follow parametric approach. (The Anderson-Darling statistic, 2015)

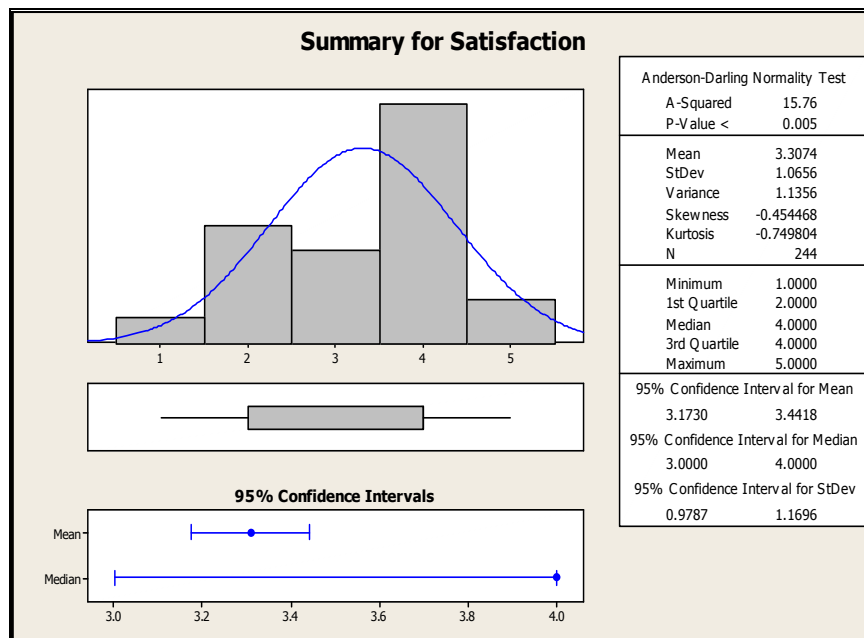


Figure 4: Summary of Students Satisfaction in ODL in OUSL

Descriptive Statistics

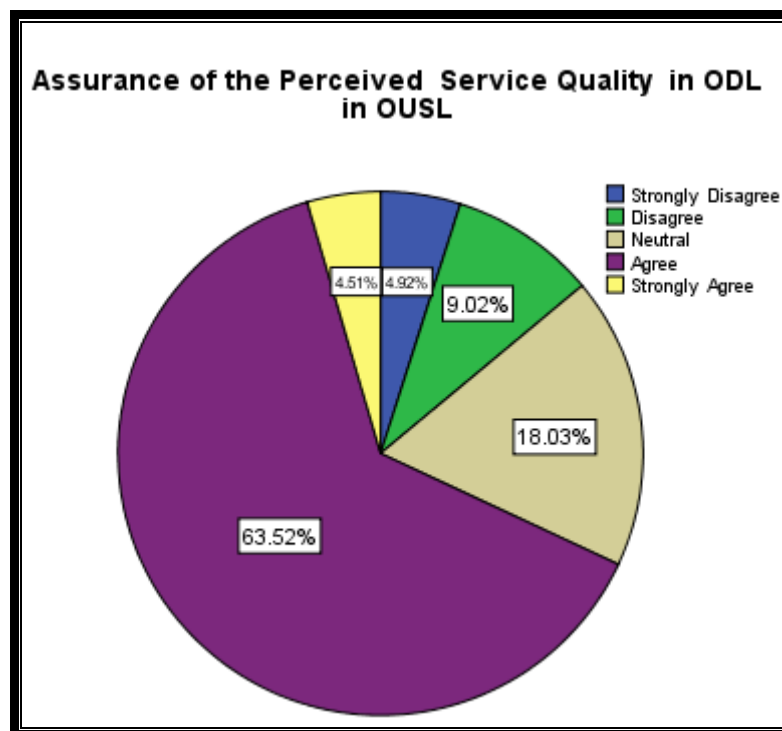


Figure 5: Assurance of the Perceived Service Quality in ODL in OUSL

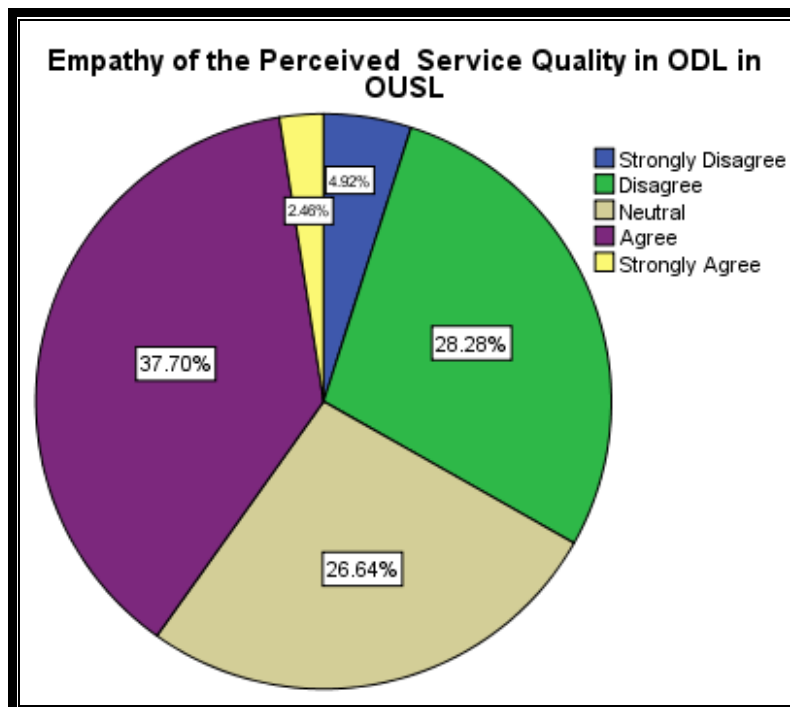


Figure 6: Empathy of the Perceived Service Quality in ODL in OUSL

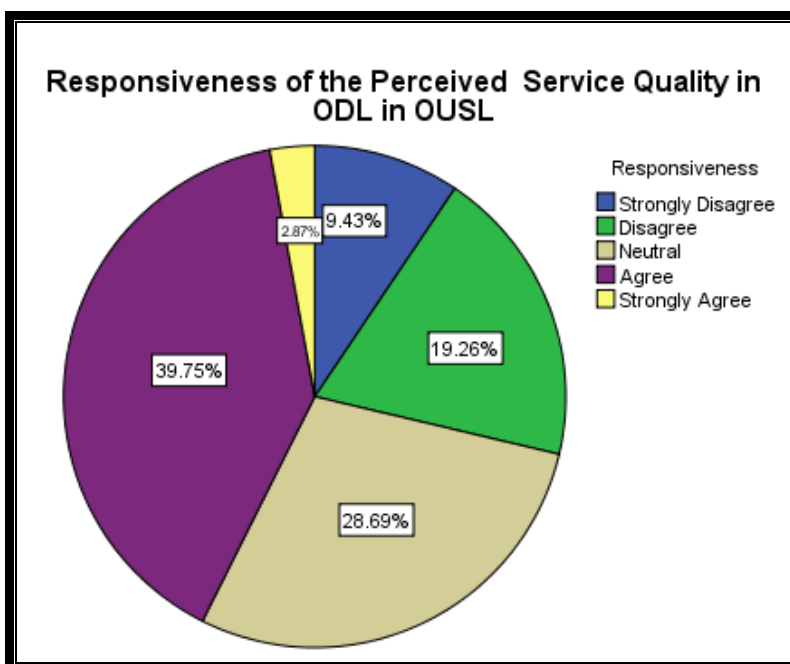


Figure7: Responsiveness of the Perceived Service Quality in ODL in OUSL

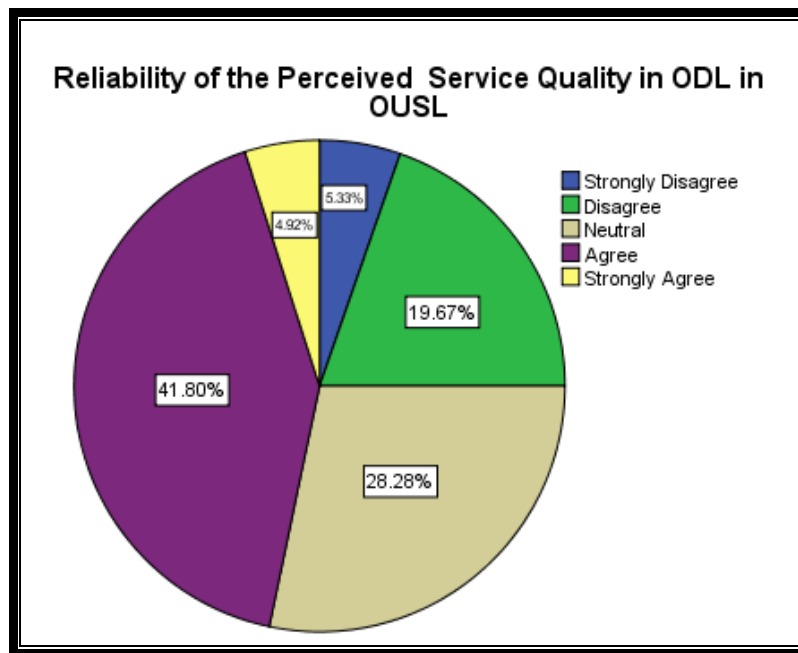


Figure 8: Reliability of the Perceived Service Quality in ODL in OUSL

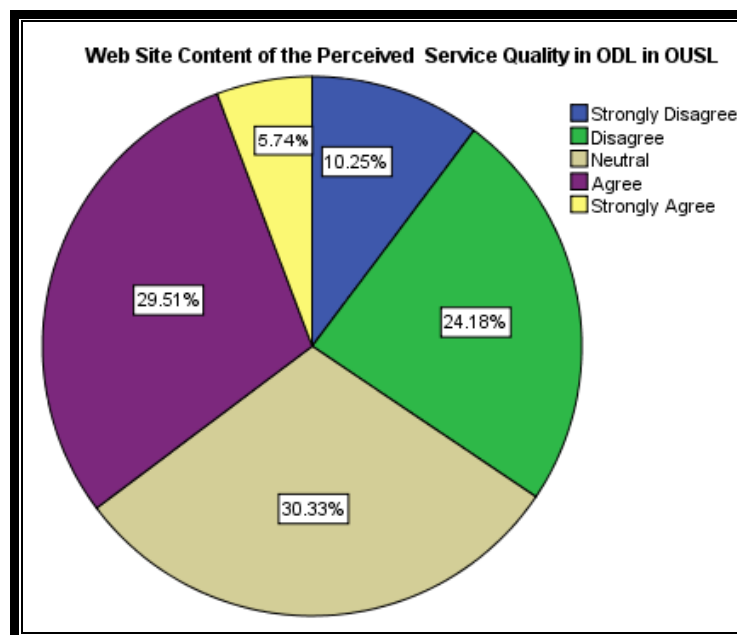


Figure 9: Web Site Content of the Perceived Service Quality in ODL in OUSL

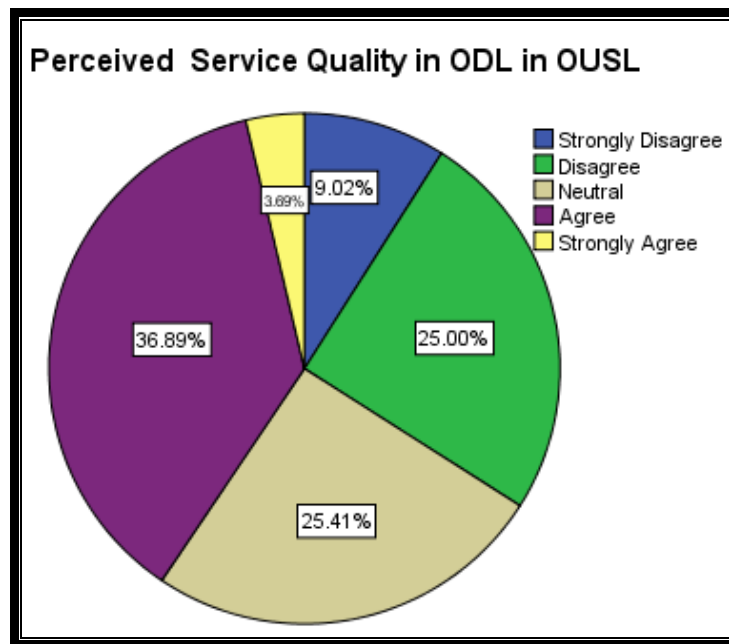


Figure10: Perceived Service Quality in ODL in OUSL

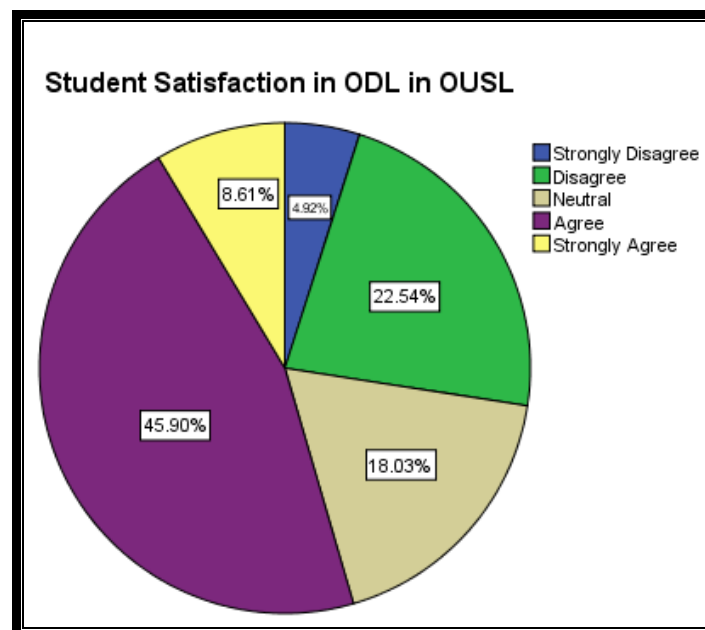


Figure 11: Satisfaction of the Perceived Service Quality in ODL in OUSL

The findings of the descriptive statistics revealed that 68% of the respondents agreed that Assurance of the service quality of the open distance learning support student satisfaction (Figure 5). And 13.9% of them were disagreed. 40.25 % of them were agreed with the Empathy (Figure 6), 42.7%, 46.7%, and 35% of them were agreed with Responsiveness (Figure 7), Reliability (Figure 8), and Web Site Content respectively (Figure 9). The students of 40.6% were agreed with the perceived service quality in ODL (Figure 10) and 54.5% were agree with the student satisfaction of the ODL environment (Figure 11).

Table 4: Spearman Rank Correlation with Students Perceived Service Quality and Five Dimensions

		Assurance	Empathy	Responsiv- eness	Reliability	Web Site Content	Satisfaction
Spearman's rank correlation SQ	Correlation Coefficient	.339**	.340**	.391**	.395**	.337**	.388**
	Sig. (2- tailed)(P- Value)	.000	.000	.000	.000	.000	.000

** . Correlation is significant at the 0.01 level (2-tailed).

All dimensions were showed strong positive significant ($p = 0.0000$) correlation with the Students Perceived Service Quality in ODL in OUSL. Spearman rank correlation has revealed there is a positive (0.388) and significant ($P = 0.000$) relationship between Students Perceived Service Quality and the Students satisfaction. It is concluded that the hypothesis (H1) is supported and there is an association between Students' Perceived Service Quality and Students' Satisfaction in the ODL environment. The results were complied with the (Mantovani, 2012) and (Udo, Bagchi, & Kirs, 2011).

Table 5: Spearman Rank Correlation with Students Perceived Service Quality and the Students Satisfaction in ODL in OUSL

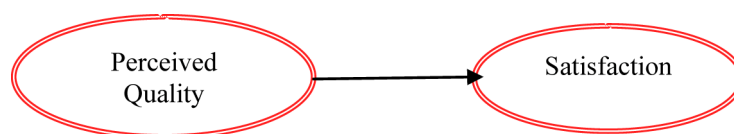
			Service Quality	Satisfaction
Spearman's rank Correlation	Service Quality	Correlation Coefficient	1.000	.388**
		Sig. (2-tailed)		.000

** . Correlation is significant at the 0.01 level (2-tailed).

Discussion

The findings of the study revealed, all the dimensions have showed significant positive relationship with service quality. And also significant positive correlation towards student perceived service quality and student satisfaction in ODL directly. The null hypothesis was accepted; H_0 : There is an association between Perceived Service Quality and Student Satisfaction in ODL in OUSL. Since the results showing very favourable output there must be a provision for the development of each and every construct of service quality in ODL environment.

Direct effect;



Conclusion

The results of this research will provide precise theoretical insights to the management and comprehensive understanding to broaden the essential features of the relationship of service quality and student satisfaction. Since the service quality could be considered as the antecedent of student satisfaction and student behavioral intention the strategic decisions of managing service quality of the institution would become more important. The use of large sample representing with other regional centers would strengthen the research findings of a future research. In addition to SERVQUAL five dimensions adding more variables unique to the distance education environment will enhance the determination of significant variables which add specific value to the ODL research.

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THE RELATIONSHIP AMONGST DEMOGRAPHIC FACTORS, LEARNER SATISFACTION AND PERFORMANCE: A QUANTITATIVE OBSERVATION IN OPEN UNIVERSITY MALAYSIA

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Abstract

The main purpose of this study is to examine the effect of demographic factors on learners' satisfaction. Specific purpose of this study is to provide quantitative justification that learner satisfaction can have a positive influence on students' performance in their studies. This is a quantitative study involving the use of a survey. Questionnaires were administered through online data collection procedure with the help of research assistants. The questionnaire was reviewed by a professor for preliminary content validation and it was developed using Likert scale. Convenience sampling methodology adopted allows the researchers to focus on the more imperative aspects of their research instead of calculating the best way to obtain a population sample. This study was conducted in Open University Malaysia based on 1604 usable questionnaires. Deductive research philosophy was applied to this research because the hypotheses were clearly stated in this paper. Data validity issues were resolved. A structural equation model was disclosed to answer the hypotheses. Mean analysis were presented to enrich the discussion of the findings. The results revealed that there was a significant relationship between demographic factors (age, gender and programs) and satisfaction of learners ($P < 0.05$). Subsequently, satisfactions of learners were found to have an impact on their performance in the academia ($P < 0.10$). Quantitative evidence in support of these findings were provided in this paper. The contribution of this paper is two-fold, namely, (1) providing information to the institution's policy makers on issues related to learner satisfaction and (2) narrowing the methodological gap in the research area. Future researchers are welcomed to use the research instrument and framework proposed in this paper in promoting and expanding knowledge in this very important area of student satisfaction.

1. Background of the Study

According to Kotler (2009), the definition of satisfaction is to have the feeling that a person might live as a result of comparing the performance of a product / service in relation to its expectations. In the context of online and distance learning environment, learner satisfaction is limited to their expectations that are related to their success in getting jobs, promotions and obtaining success in the labour market (Abassi et al., 2011). In satisfying learners, universities must provide services which are of high quality. Factors such as price, availability, and purchase intentions affecting customers' perception have been much studied according to previous authors like Cronin & Taylor (1992).

This present paper will focus on learners' satisfaction that is much related to the academia. Previous researchers (Ivana et al., 2013; Kuo et al., 2013) have focused on student satisfaction in relation to quality and effectiveness of the higher education institutions (HEIs). According to them, the higher the degree of satisfaction, the more the students will recommend a university to their peers and future prospects. In light of the above explanation, most HEIs make it a point to obtain student feedback on the importance they attach to each of the services and their satisfaction level with those services provided. Consequently, many HEIs have carried out their own student satisfaction surveys on a

regular basis (Tessema et al., 2012; Shahid et al., 2012). However there is a dearth of information on the relationship between demographic variables and student satisfaction.

Although some studies (Wickramasinghe & Perera, 2010; Ivana et al., 2013) have looked into the effect of demographic variables, the analysis was only limited to the means and t-tests. This study will provide a methodological contribution by presenting a structural equation model prior to discussing the hypotheses. In addition, this study will fill in the void in the previous literature by attending to the call from Rashid & Latif (2004). According to their suggestions, one area that needs to be addressed in future studies is the effects of gender, ethnicity, age, and study programs on satisfaction of learners.

2. Objectives of the Study

- (a) To validate the measurement of satisfaction by conducting factor analysis;
- (b) To investigate the effect of demographic factors (age, gender, race and programme) on learner satisfaction;
- (c) To examine the relationship between student satisfaction and student performance.

3. Validity of the Instrument

An exploratory factor analysis (EFA) was performed to enhance the acceptability of the results. It has been clearly stated by Sachdeva (2009, pg. 54) that samples and designs do not have validity. Conversely only conclusions and inferences can be considered as valid. Exploratory factor analysis is used to confirm the factorial structure of a developed instrument in order to provide justification for construct validity according to Cohen et al. (2011, pg. 30). The factor analysis in this paper was conducted using varimax rotation procedure to assess the initial measurement scale. In addition, the researchers have used Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity to examine the effectiveness of the factor analysis. After rotation, only one factor was extracted.

Table 1: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.973
Bartlett's Test of Sphericity	Approx. Chi-Square	40403.344
	df	253.000
	Sig.	.000

Table 2: Component Matrix

No	Component	Communalities
1	If I am given the chance to go through the learning process again, I will choose OUM	.874
2	I will encourage others (eg. family members, and friends) to study in OUM	.873
3	Overall, the quality of services at OUM is good	.871
4	I feel very attached to OUM	.867
5	I am proud to be able to take the present study programme	.857
6	I am sure that the university staff are always acting in my best interests	.856
7	OUM is a University that is equivalent to other higher learning institutions in terms of quality	.856
8	I trust the university staff completely	.853
9	Overall, communication between University and learners is good	.850
10	Overall, the quality of facilities at OUM is good	.837
11	I am proud to be OUM student	.831
12	University staff always keep their promises to me	.829
13	Overall, I am satisfied with my programme	.827
14	When I set targets for myself, I always reach them	.823
15	Overall, I am satisfied with my faculty	.820
16	Overall I am satisfied with the quality of teaching at OUM	.819
17	I always have intensive contact with my fellow learners	.804
18	When I set targets to complete my study programme, I always reach them	.802

Table 1 and 2 report the construct validity as reflected in loadings onto a single factor for the overall measures of satisfaction ($KMO = 0.97$, communalities > 0.80) which are well above the recommendations of Burton & Mazerolle ($KMO > 0.60$; communalities > 0.50). In view of Asyraf et al. (2014), assessment of individual measurement model in an EFA exercise is imperative. According to them, every construct should be first subjected to the appraisal of unidimensionality and validity of the individual construct. They have also explained that the items or indicators in the construct, which do not contribute to optimum result, should be removed. Therefore, some items were removed from the instrument because they do not measure the satisfaction construct satisfactorily. The questionnaire was reviewed by a professor for preliminary content validation and it was developed using Likert scale. A Likert scale of seven points ranging from 1 (strongly disagree) to 7 (strongly agree) was used to determine the extent to which the learners agreed or disagreed with the statements.

4. Research Methodology

The sample is limited to learners of OUM with a final sample of 1604 for analyses purposes. Online survey method was used to ensure that the opinions from learners of different geographical areas may be obtained. Oppenheim (2003, pp102) discussed the advantages of adopting a mail questionnaire form of data collection. The main advantages according to him are low cost, avoidance of bias and ability to reach respondents of different geographical areas. The population cannot be exactly defined. Therefore convenience sampling method was applied in this study. By obtaining a usable response

size of more than 300, this study offers a sample group, which is more representative, hence limiting the methodological gap available. Data of more than 300 will allow this study to use structural equation modelling as specified by the statistical authorities (Hair et al., 2010; Kenny & Baron, 1986).

As important as obtaining a huge sample size, it is also crucial to ensure ethical dimensions are preserved in a research. Collis & Hussey (2003) elaborated in their literature that in a data collection process, it is vital to offer confidentiality and anonymity to obtain honest opinions. Treating the data provided by the respondents confidentially is the primary responsibility of the researcher. Privacy of the respondents will be guarded tactfully at all times in this research. The data collection process was conducted continuously for a period of two months.

The researchers would also like to highlight a brief data analysis review in this section. The Fisherian Theory (1958) provided the reasonable interpretation of the results of the significance test and a cut-off point of 10% indicated suggestive evidence to support the hypothesis and this could be used in research. Previous researchers have undertaken $p < 0.01$, $p < 0.05$ and $p < 0.10$ as a basis of cut-off in justifying a significant relationship. However, this study will hold the argument of Zikmund et al. (2010) in providing a cut-off threshold of the significant point, which is $p < 0.10$.

5. Analysis and Findings

The figure below shows the structural equation model performed. The hypotheses statement and findings are presented in Figure 1 and Table 3 of this study. From the statistical review, it could be concluded that the p-value is a continuous measure of evidence explaining and justifying the strength of significance between relationships in research. SEM is an advanced multivariate technique to examine multiple dependence relationships between variables simultaneously (Wang, 2012; Oke et al, 2012). Kenny & Baron (1986) acknowledged the limitations of traditional statistical method such as regression. No allowance is given for measurement error, which leads to overall error term leading to lack of model fitting (Iacobucci et al., 2007). That is the major justification for using SEM in this research.

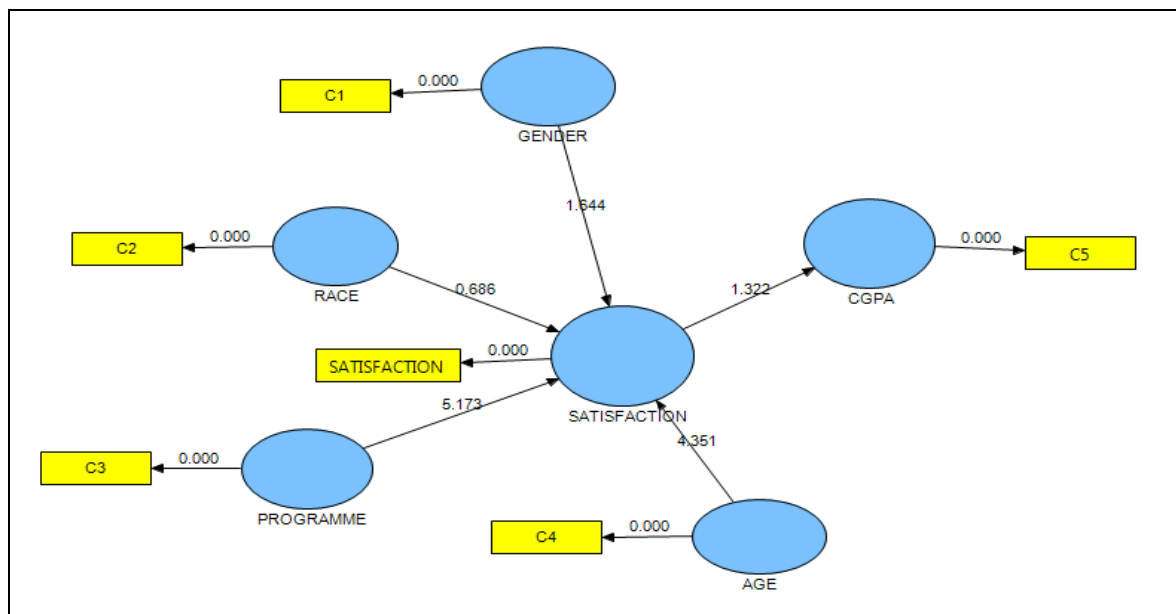


Figure 1: Structural equation model using partial least square

Table 3: Indices of the Structural Equation Model

No	Hypotheses Statement	t-value	p-value	Findings
H1	There is a relationship between gender and satisfaction	1.64	0.05	Supported
H2	There is a relationship between race and satisfaction	0.69	0.25	Not Supported
H3	There is a relationship between programme taken and satisfaction	5.17	0.01	Supported
H4	There is a relationship between age and satisfaction	4.35	0.01	Supported
H5	There is a relationship between satisfaction and CGPA	1.32	0.09	Supported

6. Discussion of Findings

Ivana et al. (2013) found that female students are more satisfied with the perceived quality in comparison with the values obtained by the male group. In contrast, this present study found a significant relationship between gender and student satisfaction ($p = 0.05$). As disclosed by the structural equation model, H1 is supported. Further analysis reveal that male students have scored a higher (mean = 5.82) than the female students (mean = 5.73). It is more likely that the male students will recommend others such as family members and friends to study at OUM if they wish to further their education. Besides recommending others, the male students are also more likely to be loyal to the institution.

H2 which states that there is a relationship between race and satisfaction is rejected ($p = 0.25$) as disclosed in Table 3. There is no difference between the races when it comes to trusting the university staff and being satisfied with the quality of teaching at OUM. In line with OUM's motto: 'University for All', the university staffs always act in the best interest of all its students, regardless of the age, gender, race and background.

The relationship between programme and satisfaction is significant ($p = 0.01$) as shown in Table 3. As articulated by Kuo et al. (2013), HEIs consider student satisfaction as one of the major elements in determining the quality of online programs. The relationship between program of study and satisfaction found in this study is contrary to the results obtained by Rashid & Latif (2004). In their regression analysis, the relationship between program and satisfaction was found to be not significant ($p > 0.05$). In OUM, learners are satisfied with their program and faculty. They perceive that their communication with the university staff is good. Students often try hard to reach the targets to complete their study program. Through a mean comparison, it is found that learners have provided their views on their satisfaction with most of the programs in OUM (BNS = 5.58; BOSHHRM = 5.67; DIS = 6.02; BIS = 5.77; BITM = 5.76; BHRM = 5.73; BBA = 5.58; MEdu = 5.85; BECHE = 5.59; BTESL = 5.79; DHRM = 6.37; MOSHRM = 5.76; MBA = 5.60). The indices are quantitative compelling evidence to support H3.

Next, the researchers would like to discuss the significant relationship between age and satisfaction ($p = 0.01$). The SEM assessment provides support for this hypothesis and also the findings of this paper compliment the findings of a previous study (Wickramasinghe & Perera, 2010). Students perceive that OUM is a university that is equivalent to other higher learning institutions in terms of quality. In effect, they are satisfied with the quality of teaching and learning. They have intensive contact with their fellow learners, despite of the varied backgrounds, mainly for the purpose of sharing and enhancing knowledge. Nevertheless, the satisfaction level from one age group to the other

differs slightly. The mean analysis reports (56 and above = 5.93; 46-55 years old = 5.80; 36-45 years old = 5.79; 26-35 years old = 5.72; 18-25 years old = 5.57) for the sample in this research. It appears that the older the students, the more satisfied they are. H4 is supported by the SEM assessment presented earlier in this study. The results speak well about the older students; being more matured and more experienced, they probably are better in adapting themselves with the ODL environment in OUM. The emotional and academic commitment may be higher compared to the younger students and their priorities would be more focused on the academic achievement and success.

In terms of CGPA, H5 is supported in this study. There is a significant relationship ($p = 0.09$) between satisfaction and CGPA. CGPA is the cumulative grade point average and it is taken as a measure students' performance. The findings reveal that students who have CGPA > 3.01 (mean = 5.70) are highly satisfied with OUM. According to Ivana et al. (2013), universities have experienced many challenges like adapting to new methods, ensuring quality assessments, and paying attention to students needs to increase students' performance. Consistent with their study, OUM's student's performance is better if they are satisfied with the services provided by the university.

7. Implications

The researchers have arrived to the following implications:

- (a) OUM should track the trends in the intake in terms of the age and gender. If there is an increase in the younger group of students, then OUM has to be more meticulous in providing the right services which will satisfy its students. They are more critical than the older students, and their behavioural intention will be more adversely affected. This will not contribute to OUM's success, sustainability and remain competitive in the education market.
- (b) Similarly, if the intake trend shows more female than male, greater effort needs to be put in to ensure that the female students satisfaction level is increased, otherwise there may be some adverse effect on the enrolment and retention of existing students.
- (c) OUM should continue offering the mentioned programmes in this paper as they are effective in enhancing students' satisfaction.
- (d) Student satisfaction can affect their CGPA. As important as developing the skills and knowledge of students, OUM should focus on student satisfaction in view of developing their academic competency.

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PEDAGOGICAL SKILLS, ATTITUDE AND KNOWLEDGE OF TUTORS IN KLANG VALLEY: EMPIRICAL EVIDENCE FROM OPEN UNIVERSITY MALAYSIA

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Abstract

Tutoring not only requires a considerable amount of pedagogical skills, but also the integration of knowledge and attitude. Quality assurance in teaching and learning heavily depends on the performance of the tutors in an education organisation. Learners still choose tutorial-based classes despite the ready availability of other convenient alternatives. The main purpose of this paper is to analyse the pedagogical skills, attitude and knowledge of the tutors in Open University Malaysia. A review of previous studies was undertaken to show the literature gap. This study surveyed four learning centres and six faculties of OUM in the Klang Valley prior to conducting the quantitative analyses. A total of 996 usable questionnaires were obtained in the data collection process. Online data collection procedure with the help of research assistants were undertaken to improve the response rate of this research. Issues related to data normality (Kurtosis < 3.80; Skewness < 1.00) were firstly resolved. The mean analysis reported favourable indices for pedagogical skills (80.6%), attitude (80.5%) and knowledge (80.1%) of the tutors in the four learning centres of OUM. Subsequently, a one-way analysis of variance (ANOVA) test was employed to investigate for significant differences in tutors' skills by 1) learning centres 2) age and 3) faculties. The findings revealed that there are no significant differences between tutors in terms of learning centres and age group ($p > 0.05$). However, there is a significant difference between tutors' skills when assessed by faculties ($P < 0.01$). The quantitative evidence divulged from this paper could be used for training purposes in the outlook of improving quality education provided to the learners. Future researchers are suggested to conduct qualitative interviews with the tutors using the same research instrument offered by this study to further constrict the literature gap.

1. Introduction

OUM is an Open and distance learning (ODL) institution that adopts the blended mode of instruction. Unlike the normal classroom lecturing/teaching practised by the conventional universities, learners of OUM are provided with limited number of face-to-face tutoring sessions. Since students/learners are the most important sources of information about the teaching and tutoring ability of their lecturers or tutors. The studies of LET or SET (students' evaluation of teaching) are important to all higher institutions of learning. This paper studied the learners evaluation of tutors (LET) at Open University Malaysia (OUM). Most of the research studies cited in this paper however are related to students'

evaluation teaching (SET) at conventional universities. But for the convenience of writing, both LET and SET are referred to in this paper as LET (learner/tutor evaluation of tutoring/teaching).

The main purpose of this paper is to analyse the performance of OUM from the perspectives of knowledge, pedagogical skills and attitude. There are two main reasons as to why the performance of tutors should be evaluated. Firstly, evaluation feedbacks help tutors to identify their own strengths and weaknesses, enabling them to identify areas that need so as to meet learning needs. Secondly, the analysis of learners' evaluation of tutors (LET) provides additional information to the administrator for decision making purposes, such as determining the tenure of the tutors (Lim et al., 2012). More importantly, the evaluation instrument is used to identify the three main dimensions that constitute to the overall performance of the tutors noting that teaching or tutoring is a multi-dimensional construct (Berk, 2005). Many studies have been carried out on students' evaluation of teaching (Cashin, 1988; Tagomori, 1994; Eggen & Kauchak, 2001; Stokes & Martin, 2008; Guo & Watkins, 2010; Lim et al., 2012; Morley, 2014). These studies have focused on different aspects. For example, Tagomori (1994) conducted a thorough content analysis on the evaluation instruments used by the National Council for Accreditation of Teacher Education (NCATE).

Some researchers (Cashin, 1988; Morley, 2014) focused on improving the reliability of the evaluation instruments internal consistency of the measurements. There are also some researchers (Eggen & Kauchak, 2001) who focused on factors such as knowledge, pedagogical skills, and attitudes that contribute to teaching or tutoring effectiveness. More recently, studies has begun to expand beyond the factors typically assessed during conducting a LET exercise. Of particular interest is a research performed by Stokes & Martin (2008), who discussed the importance of passion and good experience in the classroom. Beyond the traditional research that were conducted by previous academicians, an important paper by Guo & Watkins (2010) who performed a research in China, examined the association between LET with demographic factors (gender, academic area, class size, tutor personality). Such information are imperative to decision making. It is hoped that this paper will compliment the findings of Guo & Watkins (2010). The second contribution is to echo the work of Lim et al. (2012) by providing a sufficient sample in the study that uses knowledge, pedagogical skills, and attitudes as the main variables, hence justifying methodological significance in this area of interest.

2. Research Instrument

Table 1 depicts the items used to measure the performance of the tutors in terms of knowledge, pedagogical skills, and attitudes. Ten items were used in the measurement. A Likert scale of five points ranging from 1 (fully disagree) to 5 (fully agree) was used to determine the extent to which the learners agreed or disagreed with the statements. In light of obtaining rich information, demographic related questions were also asked in the evaluation form. In addition, open ended questions such as comments, feedbacks, and suggestions were thoroughly acquired in the survey exercise. All the data were collected with learners as respondents using an online LET system designed by the Institute of Teaching and Learning (ITLA) and developed by the ICT department of OUM.

Table 1: Measurement of Tutors Performance

No	Statement
1	The tutor is knowledgeable in the tutorial subject.
2	The tutor presents the lessons clearly.
3	The tutor guides the learners systematically.
4	The tutor interacts well with the learners.
5	The tutor facilitates interesting discussion during the tutorial.
6	The tutor shows enthusiasm in conducting the tutorial.
7	The tutor is able to motivate learners.
8	The tutor provides additional notes as study materials.
9	The tutor makes good use of audio-visual aids to enhance his/her presentation.
10	The tutor is punctual.

3. Research Objectives

- (i) To determine whether there is a significant difference between tutors performance in terms of knowledge based on their
 - (a) Learning centre
 - (b) Faculties
 - (c) Age
- (ii) To determine whether there is a significant difference between tutors performance in terms of pedagogical skills based on their
 - (a) Learning centre
 - (b) Faculties
 - (c) Age
- (iii) To determine whether there is a significant difference between tutors performance in terms of attitude skills based on their
 - (a) Learning centre
 - (b) Faculties
 - (c) Age
- (iv) To determine the correlation among the three factors that contribute to the tutors' performance as perceived by learners
 - (a) Correlation between knowledge and pedagogy
 - (b) Correlation between knowledge and attitude
 - (c) Correlation between pedagogy and attitude

4. Research Methodology

The following sections discuss the research methodology and the robustness of our analyses. The last two sections in this paper will present a discussion of the findings and some directions for future research. The data collected is based on the LET instrument. The data collection process took place from January 2015 to March 2015. Students were given options to respond to this survey via student portal or myVLE under the feedback icons. According to Gillham (2010, pg. 11), qualitative research in nature tends to be descriptive and is very helpful in exploring complexities in the scope of study. Moreover, based on the discussion of Timm et al. (1994), qualitative data can help gather information

on sensitive issues and nonverbal cues. Therefore, feedbacks and comments from the students were captured in the data collection process.

This study also opts for quantitative method in the data analysis process because quantitative methods are superior in studying causality and relationships (Barrett, 2007; Holden & Lynch, 2004) as intended by this study. The combination of the two methods (quantitative and qualitative) is vital because the current situations in social sciences often demand researchers to produce findings, which are more reliable and usable by practitioners and policy makers (Gorard et al., 2004, pg. 43). That is one of the justifications of the researchers to use mix method in reporting the results of this study. Research assistants, administrators, and academicians of ITLA have together worked in the data collection process in order to gather sufficient data for analyses purposes. Students from all faculties and four centres in Klang Valley (Bangi, Sri Rampai, Petaling Jaya and Shah Alam) have been surveyed. A total of 996 usable responses were used in this study which is sufficient for the population of more than 100,000 according to statistical authorities like Krejcie & Morgan (1970). The findings are much more meaningful in this study because it can represent the population of OUM which is between 100,000 to 200,000 students in year 2015.

5. Profile of the Respondents

Henstridge (2013) stated that it is assumed that the likelihood of the results representing the population is higher when the response rate is high. He further elaborated that the more interaction between the researcher and the respondents, the higher the probability of obtaining a good response rate. Additionally, to ensure effectiveness of data collection procedure, Stewart & Kent (2006) proposed to researchers to limit their length of questionnaires. As depicted in Table 2, the profile of respondents of this present study is reported. To summarise Table 2, the responses from learning centres is quite equally distributed. Majority of tutors of OUM fall in the age category of 35 to 45 years old, implying that they are in their prime age. Correspondingly, it can also be observed that most of the tutors are from the faculty of languages and education followed by OUM business school. Further analysis in the subsequent section will show that this study is free from bias.

Table 2: Profile of Respondents

Demographic Variables	Frequency (n = 996)	Valid Percentage (%)
Learning Centres:		
Bangi	262	26.3
Sri Rampai	137	13.8
Shah Alam	274	27.5
Petaling Jaya	323	32.4
Age:		
< 35 years old	137	13.8
35-45 years old	400	40.2
46-55 years old	301	30.2
56-65 years old	144	14.5
> 65 years old	14	1.4
Faculty:		
FASS	164	16.5
FEL	341	34.2
FITMC	99	9.9
FONAS	43	4.3
FST	68	6.8
OUMBS	281	28.2

6. Normality and Non-Response Bias

As stated by Lim et al. (2012), it is important to strengthen the acceptability of the results in future studies that are related to LET. In that case, to narrow this methodological gap, the researchers have performed three tests, namely 1) kurtosis 2) skewness and 3) Mann Whitney U. Results for normality is reported for learning centre (kurtosis = -1.43; skewness = -0.28), age (kurtosis = -0.49; skewness = 0.28) and faculty (kurtosis = -1.52; skewness = 0.35). Fortunately, the data did fulfil the requirements of normality, which is tested statistically by using the Kurtosis and Skewness tests. This is because the threshold of kurtosis should be below 3.80 (Lei & Lomax, 2005) whereas the value of Skewness should be between -2 to +2 according to Weinberg & Abramowitz (2002, pg. 278).

In view of further strengthening the elimination of bias, this study offers a Mann Whitney U analysis on the respective constructs. The 996 usable replies were apportioned based on learning centres. After that, Mann Whitney U test was undertaken to assess the responses from the main three constructs (knowledge, pedagogical skills, and attitude) of the survey instrument. Before the test was conducted, the mean value for all the variables were computed and used as a basis to compute this test. Mann Whitney test reports indices for knowledge ($p = 0.81$), pedagogical skills ($p = 0.97$) and attitude ($p = 0.95$). The p -values for all the constructs are not significant ($p > 0.05$) indicating that bias did not exist in this study. There are no significant differences between the responses of students from various centres.

7. Quantitative Findings

The objective of this paper is to assess the significant differences between tutors' demographics (age; gender; learning centre) and their performance (knowledge, pedagogical skills; attitude). A one-way analysis of variance (ANOVA) test was employed to investigate for significant differences in tutors' performance by 1) learning centres 2) age and 3) faculties. The findings revealed that there are no significant differences between tutors in terms of learning centres and age group ($p > 0.05$). However, there is a significant difference between tutors' skills when assessed by faculties ($P < 0.01$). The results can be obtained from Table 3. In the study of Guo & Watkins (2010), there were no significant differences in their SET scores according to the gender of the tutors. The one way ANOVA in Guo & Watkins (2010) indicated that the SET scores in the three academic discipline groups were significantly different ($p < 0.01$), consistent with the findings of this present study.

Tutors in OUM are not different from each other in terms of age group; they can present the lessons clearly and systematically regardless of their age group. The findings also suggest that all age group of tutors are able to motivate their students and be punctual for classes. The same interpretation can be made when comparing tutors from different learning centres. They are all able to gauge interest of the students in an interesting manner. Consequently, they are able to show enthusiasm regardless of which learning centre they are serving in. In contrast, when it comes to differentiating tutors in terms of faculty, the quantitative findings suggest that the knowledge, pedagogical skills, and attitude of tutors are significantly different. This is probably because different faculty tutors have different practice in their delivery method. Tutors from different faculty practices different knowledge and have different imagination level that can affect their pedagogical skills. Another important point to realise is the way tutors from different faculties' establish relationship with students may also differ. Expressly, some tutors are very good at understanding where technology fits in the education system. These are the probable reasons as to why tutors are different when compared by their teaching disciplines. The results of one way ANOVA test has build upon the findings of Guo & Watkins (2010) in the light of narrowing the literature gap.

Table 3: One Way ANOVA between Tutor Demographics and Performance

Demographics	Knowledge	Pedagogy	Attitude
Learning Centre	0.58	0.56	0.52
Age	0.99	0.99	0.99
Faculty	0.01*	0.01*	0.01*

* Significance level < 0.05

Another objective of this paper is to analyse the correlation between knowledge, pedagogical skills, and attitude of tutors. The mean analysis reported favourable indices for pedagogical skills (80.6%), attitude (80.5%), and knowledge (80.1%) of the tutors in the four learning centres of OUM. Generally, this indicates that the students are satisfied with the performance and skills of OUM tutors. As could be observed in Table 4 below, all the three constructs are significantly correlated ($p < 0.001$). The strength of the association between the respective constructs is strong. Consistent with the study of Eggen & Kauchak (2001), the present paper also shows empirical evidence that knowledge, pedagogical skills and attitude of tutors are associated with each other. Pedagogy is important because it is perceived as a detailed analysis of what is to be done by a tutor. The quality of teaching depends on the love, devotion, and dedication of a tutor towards the subject of knowledge. This is one explanation on how the three constructs can be associated significantly towards each other in OUM.

Table 4: Correlation Analysis

		Knowledge	Pedagogy	Attitude
Knowledge	Pearson Correlation	1.000	.984**	.982**
	Sig. (2-tailed)		.000	.000
Pedagogy	Pearson Correlation		1.000	.985**
	Sig. (2-tailed)			.000
Attitude	Pearson Correlation			1.000
	Sig. (2-tailed)			

** . Correlation is significant at the 0.01 level (2-tailed).

8. Qualitative Findings

In education industry, the decisions made are increasingly informed through the qualitative findings of research. Qualitative findings are useful in education policy making because it often describes the settings in which the policies will be executed. Earlier in this paper, it was reported that the performance of the tutors was highly commendable as indicated by the mean scores (> 80%). However, some of the respondents believe that there are still room for improvement. The findings in Table 5 involved collection of feedback from students, content analysis, and finding of themes. These findings and recommendations which are given by the students in the feedback form are very rich and could help improve the performance of tutors in OUM.

Table 5: Feedback and Recommendations from Students

No	Feedback from Students	Recommendations
1.	Qualified tutors are not sufficient for certain areas and learning centres.	<ul style="list-style-type: none"> To add more pools of qualified tutors To get assistance from learning centres to source for new tutors.
2.	Lack of commitment from tutors because they serve on part-time basis. Several issues such as tutors' attendance and cancellation of classes should be rectified.	<ul style="list-style-type: none"> To send reminders to all appointed tutors/etutor to follow OUM's requirements and regulations. To send reminders to all appointed tutors/etutor to perform their roles and responsibilities with due care and competency.
3.	Tutors need to demonstrate quality content delivery by enhancing their pedagogical skills.	<ul style="list-style-type: none"> To train tutors/etutors appropriately so that they can demonstrate quality in their content delivery. To get assistance from learning centres to solve this issue.
4.	Some e-tutors are found to be inactive in the eforum discussions.	<ul style="list-style-type: none"> To monitor etutors frequently through the a) e-mentor programme b) week by week monitoring process and c) OUM mobile whatsapp group for tutor/e-tutor initiative.

9. Suggestions for Future Studies

Future studies can focus on performing structural equation model in order to enhance knowledge in this area. They may use the current construct as independent variables in their analysis and they may add mediating variable such as culture in their conceptual model. In this manner, the findings will be more interesting to read as we believe culture may be a significant variable that influences the way tutors behave and seek knowledge in their careers. Secondly, future studies may also treat performance as a dependent variable examined against the constructs of this present study.

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QUALITY ASSURANCE PRACTICES IN DISTANCE LEARNING: A STUDY OF KOREA NATIONAL OPEN UNIVERSITY

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Abstract

In distance education teacher and student are separated by time and space, and there is always an issue of quality. This study explored the quality assurance practices of Korea National Open University (KNOU). Five dimensions of quality were examined namely: curriculum development, faculty, assessment & evaluation, students and infrastructure. It was found that KNOU has well equipped digital media center, well experienced & qualified faculty, well equipped main and regional libraries and a research institute conducting research related to distance learning. Primary data were collected through personal interviews and online survey from students and faculty members, secondary data were collected from official websites of KNOU, internal records, and published reports.

Key words: *Quality Assurance, Distance Learning, KNOU*

Introduction

Distance learning can be traced 100 years back (Valentine, 2002). Distance Learning (DL) may refer to a number of teaching or instructional methods, correspondence courses were its initial form in Europe and this form still prevails in many institutions, though, technology has taken over in most of the institutions (Imel, 1996). These technologies have evolved from radio, TV, internet and now most recently Mobile Learning or M-Learning has emerged as latest medium of instruction in Distance Learning.

Growth in the distance learning has been phenomenal over the past 20 years. This growth has spawned the way for the conception of many new universities, institutes and traditional universities offering distance learning programs. Distance learning is different from conventional on campus or class room learning.

Apart from the benefits like low cost, flexibility and access there are some issues associated with distance learning and the most important of all is perceived quality of education imparted by distance learning. This study focuses on quality assurance practices of Korea National Open University (KNOU) to ensure the quality in distance learning.

This study was conducted in June 2012.

Research Objective

Primary objective of this study is to explore the quality assurance practices undertaken by Korea National Open University.

- (a) Curriculum development,
- (b) Faculty,
- (c) Assessment & Evaluation,
- (d) Technology/Infrastructure and
- (e) Students

Literature Review

Greenberg defined distance learning as “a planned teaching/learning experience that uses a wide spectrum of technologies to reach learners at a distance and is designed to encourage learner interaction and certification of learning” (1998, pg. 36). As defined by task force established by The Association to Advance Collegiate School of Business (2007) “Distance learning is any learning system where teaching behaviors are separated from learning behaviors”(p.5). Learner and teacher don’t have a face to face personal contact and learning is mainly the responsibility of the learner whether accomplished individually or in a group. According to Teaster and Blieszner (1999) “the term distance learning has been applied to many instructional methods: however, its primary distinction is that the teacher and the learner are separate in space and possibly time” (p. 741). Keegan (1995) argues that distance education is an outcome of the technological separation of instructor and the student which enables them to be available at a particular place in a particular time.

Distance learning opportunities have made it possible for the universities to change their marketing strategies, from niche marketing to mass marketing. Mostly traditional universities have a fixed criterion to be met by the students to get admission; this limit on the number of available seats is due to limited class room facility, infrastructure and small number of faculty members. And the number of admissions is further reduced by geographic dispersion of students. Distance learning has overcome the problems of access and cost as well. Usually the admission criteria for Open Universities are relaxed and maximum number of students can apply from all over the nation. It has also provided opportunity to those students, who cannot attend the classes due to their jobs or geographic dispersion. Another element, especially in developing countries is cost, people can’t pay much and the cost of distance learning universities is far lower as compared to traditional universities.

As Valentine (2002) says “The convenience of time and space is a big promise made by distance learning. Students do not have to physically be with the instructor in space and, depending on the method used, they do not have to be together in time as well”.

Issues of Quality in Distance Learning

“Quality” in itself is a vague term to be defined and quality in distance learning is even more complex and abstract. Quality criteria in education are debatable; some believe that quality standards in distance learning should be same as those in face to face education, while others argue that due to difference in processes, quality criteria of face to face education are not applicable in distance learning (Jung & Latchem, 2007). Traditional institutions apply high standards of selection and admit only those who fulfill their criteria while Distance Learning institutions are run on the rule of access and there are tremendous differences among the learner-instructor interactions in both types (Koul, 2006).

Moreover, as argued by Jung and Latchem (2007) different stakeholders have different views of quality, these stakeholders include governments, employers, institutional managers, faculty members and researchers and these all might differ in their standards and criteria of quality.

Jung and Latchem (2007) provide definition of quality by combining varying aspects of quality used by Asian universities in general as follows:

- Conforming to the standards applying to conventional education;
- Fitness for purpose;
- Meeting customers' needs;
- Continuous improvement; and
- Compliance with international standards and requirements

Leh and Jobin (2008) have given four main areas in which quality should be controlled which are: prerequisites, instructional design, support systems, and program design.

Following are major areas that require high quality assurance on the part of distance learning institutions/universities.

1. Curriculum Development
2. Faculty
 - Faculty composition and qualification
 - Faculty satisfaction
3. Assessment & Evaluation
4. Technology and Infrastructure
5. Students

These criteria have been used in the current study as elements of quality in distance learning.

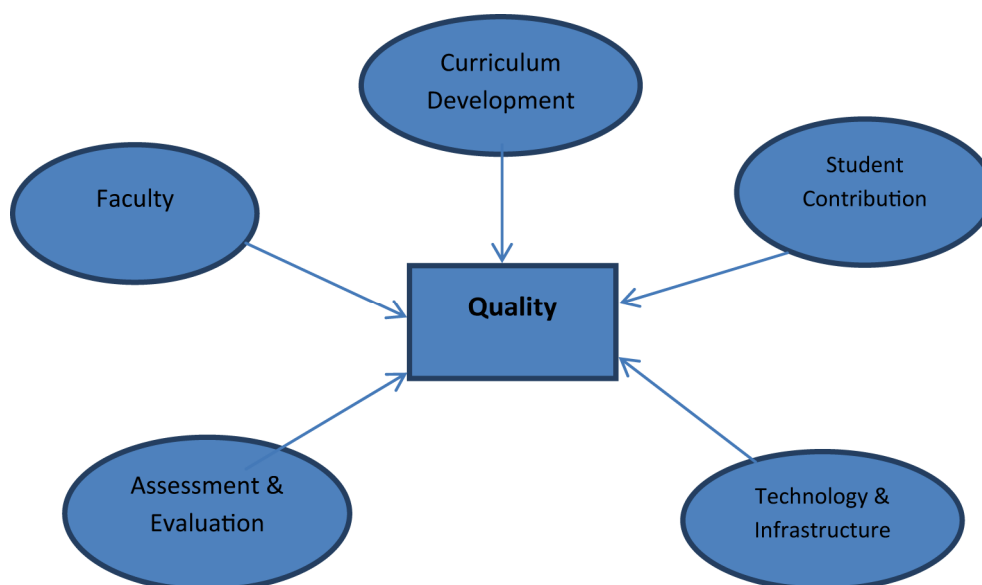


Figure 1: Elements of Quality in Distance Learning

Methodology

This study is combination of qualitative and quantitative research with cross-sectional design. Secondary data have been collected from university management, official website of university, internal records and published reports.

Primary data have been collected from students, teachers and university officials. Semi structured interviews were conducted of four university officials including: Dean Academic Affairs, Dean Students Affairs, Vice Dean Strategic Planning and Head Business School whereas an online questionnaire was sent to all faculty members only 15 faculty members/researchers responded.

For data about KNOU alumni, a published report of KNOU was used in which required information had been collected by KNOU researchers.

Introduction of Korea National Open University

Korea National Open University was established on March 9, 1972 as Korea's first lifelong education institution. (<http://www.knou.ac.kr>)

How KNOU Works

KNOU uses a combination of face to face and online/TV lectures. KNOU provides TV lectures, multimedia lectures, web-based lectures and audio lectures.

Following table shows the detail of courses available in different media.

Table 1: Courses Offered by KNOU

Program	Media	Number of Courses Offered
Undergraduate	TV	62
	Multimedia	270
	Web	6
	Audio	18
	Sub total	356
Graduate	Web	95
Total		451

Source: <http://www.knou.ac.kr/engknou2/>

Table 1 provides the detail regarding courses and media offered by KNOU, 451 courses are offered by KNOU in total.

Students enrolled in different degree programs study their courses according to the available media. In addition to these media students have to attend 08 hours per course per semester offline lectures (class room) for the prescribed courses by the department/school. Each semester comprises of 15 weeks and for each course there is 01 lecture per week, so in total 15 lectures for one course in one semester.

Following Departments are working in KNOU:

Graduate School

- Department of Practical English
- Department of Practical Chinese
- Department of Japanese Language and Culture
- Department of Law
- Department of Public Administration
- Department of Management
- Department of Media Arts & Cultural Contents
- Department of Agricultural Life Sciences
- Department of Home Economics
- Department of Computer Science
- Department of e- Learning
- Department of Bioinformatics
- Department of Environmental Health Systems
- Department of Nursing
- Department of Lifelong Education
- Department of Youth Education
- Department of Early Childhood Education

Undergraduate School

College of Liberal Arts

- Department of Korean Language and Literature
- Department of English Language and Literature
- Department of Chinese Language and Literature
- Department of French Language and Literature
- Department of Japanese Studies

College of Social Science

- Department of Law
- Department of Public Administration
- Department of Economics
- Department of Management
- Department of International Trade
- Department of Media Arts & Sciences
- Department of Tourism

College of Natural Science

- Department of Agricultural Science
- Department of Home Economics
- Department of Computer Science
- Department of Information Statistics
- Department of Environmental Health
- Department of Nursing

College of Education

- Department of Education
- Department of Youth Education
- Department of Early Childhood Education
- Department of Culture & Liberal Arts

In addition to degree programs KNOU also offers various training/license programs.

Quality Assurance Practices at KNOU

1. Curriculum Development

At KNOU there is a Curriculum Development Committee which comprises of dean of Academic affairs, head of information and computer center, and 07 professors.

Steps of curriculum development before production are as under:

1. A department that wishes to develop a new curriculum or revise its existing curriculum applies to KNOU academic division. However, it should have been suggested or brought up in a general meeting of professors beforehand.
2. The academic division screens the request documents (documents are prescribed by the academic division).
3. If there is a need that the request should be screened by other divisions before passing it to the curriculum development committee, there is another screening by the people in charge of administration in academic division, lecture division, test division, grade division, the center of information and computer.
4. The curriculum development committee holds a meeting to decide the validity of request.
5. If approved, the related department, lecture division, test division, grade division and the center for information and computer and Digital Media center and the lifelong learning center are informed of the decision

This process shows that quality is assured at each step of curriculum development.

2. Faculty

To provide quality education to students, teaching faculty of any university is the real barometer. Qualified and committed faculty is the key for any institution. To study the quality of any faculty two important dimensions are considered:

- I. Faculty composition and qualification
- II. Faculty Satisfaction

Faculty composition & qualification refers to the number of faculty members available with highest terminal degree (PhD) and its research output.

Faculty Composition at KNOU

At KNOU all the video/audio lectures are recorded by the permanent faculty members. They are also responsible for the content development of the course.

Table 2(a): Faculty Composition at KNOU

Permanent Staff		
Category	Number	Terminal Degree
Professors	84	PhD
Associate Professors	34	PhD
Assistant Professors	18	PhD
Lecturers	11	PhD
Researchers	15	PhD
Teaching Assistants	146	Bachelors
Total full time faculty	308	
Part Time Staff		
Lecturers (Part time) / semester	2,960	NA
Tutors (Part time) / semester	396	NA
Total part time faculty	3356	

Source: <http://www.knou.ac.kr/engknou2/>

Table 2(a) provides the detail of number and composition of full time and part time faculty members of KNOU. KNOU has a reasonable number of full time and part time teachers.

Table 2(a) also provides the details of the faculty composition at KNOU which shows 146 PhD faculty members and 15 PhD researchers along with 146 teaching assistants. A huge number of part time lecturers are hired to cater the needs of students all over Korea. If we see the faculty composition it is evident that at KNOU all the faculty members are having PhD degrees which is the requirement of the university faculty, more over 13 out of 15 researchers have PhD degrees and remaining 02 are about complete their PhD as they are in the process of finalizing their theses.

Research Output

61 research papers have published by KNOU in the year 2011. (<http://heik.academyinfo.go.kr>)

Faculty Satisfaction

Faculty satisfaction is a very important element contributing to the quality of education. Satisfied faculty can produce quality output (students). To know the satisfaction of faculty members of KNOU an online link was sent to 162 faculty members but only 15 responded.

Table 2(b): Respondents' Composition

Participants' Composition	
Category	Number
Professor	6
Associate Professor	2
Assistant Professor	2
Lecturer	1
Researcher	4
Total	15

Questionnaire Analysis:

Satisfaction with the Mix of Research, Teaching and Community Service

Mostly KNOU staff is satisfied from the mix of research, teaching and community service, and the intellectual stimulation from work.

Satisfaction with the Type of Teaching / Research and Intellectual Stimulation

The type of teaching / research currently being done by teachers/researchers is also satisfactory from their point of view. Most of the respondents considered their research as valuable and productive.

The Level of Interaction with Students

Amount of interaction with students is not plentiful according to the respondents, being part of distance Education University they do face this dilemma and this is a common complaint of most of the faculty members of distance education providers.

The Cooperation Received from Colleagues & Mentoring Available

Respondents seem quite satisfied from the cooperation received from the coworkers and mentoring available to them. This is a healthy sign, if seniors provide proper mentoring to the juniors, satisfaction level of juniors goes up. Good cooperation from colleagues enhances the productivity of teachers/researchers and ultimately is beneficial for students in particular and university in general.

The Administrative Support Provided by the Department

Respondents have shown high level of satisfaction from the administrative support they get from their department.

Clarity about the Faculty Promotion & Prospects for Advancement

A low level of satisfaction is reported about the provided clarity regarding faculty promotion process. This needs to be addressed by university administration, if employees are not clear about the promotion procedures, it adds to their dissatisfaction and de-motivation and resultantly high turnover. Lack of clarity about promotions leads to perceived low prospects of advancement and same is the case here; respondents view their prospects for advancements as blurred.

Satisfaction with the Salary and Compensation Package

As far as salary and job security are concerned, respondents have shown high level of satisfaction and it can be inferred that KNOU provides competitive salary and stable work environment.

Job Security and Stability

Since KNOU is a public university and faculty members have permanent job, so they feel secured enough. KNOU has a separate department of research which is called Institute of Distance Education (IDE), researchers working at IDE are working on adhoc basis, these researchers were quite concerned about the continuity of their jobs.

Availability of Time

Responding to the question regarding the amount of time available for family and themselves, respondents have exhibited average satisfaction. This may be due to long working hours.

The Overall Climate at the Department

Respondents have shown high level of satisfaction regarding the overall climate at the department. Analysis of faculty composition and satisfaction shows that this component of KNOU is very strong, highly qualified and satisfied faculty is an expression of quality for the education imparted by the university.

3. Assessment & Evaluation

Assessment and evaluation are the two techniques used to gauge the performance of students in a particular course. To improve the learning outcomes of students, assessment and evaluation practices need to be dealt accordingly. American Association for Higher Education (AAHE), the American Education Research Association (AERA), the American Psychological Association (APA), and the National Council on Measurement in Education (NCME) have elaborated the difference between these two terms. Assessment is an ongoing activity with focus on improving learning of the students, whereas evaluation is aimed at measuring the performance of the students. According to Baehr (n.d) purpose of assessment is to improve the quality of future performance and the purpose of evaluation is to measure the quality of present performance or we can say that former is used to improve the performance and latter is used to make judgments. Angelo and Cross (1993) describe assessment as being formative (ongoing), Process oriented (how learning is taking place) and Diagnostic (identifying weak areas). Whereas evaluation is Summative (to measure quality), Product oriented (what learned) and Judgmental (Assigning grade/score) in nature (Angelo & Cross, 1993). Baehr (n.d) differentiates assessment and evaluation as “Evaluation determines whether a standard was met; success or failure and Assessment provides feedback on performance; Strengths, Areas for Improvement, and Insights.”

Assessment

KNOU doesn't apply assessment techniques, according to Dean Student Affairs, there are only mid-term and final term examinations no quizzes, assignments or Graded Discussions are held.

Evaluation

At KNOU, all the exams are conducted offline in proctored environment. Mid term exams have 30% and final term exams constitute 70% of the total grading weightage. Mid and final term exams are conducted offline; Midterm exams have no set rules, it depend on the teacher. Teacher may give any assignment or take exam based on short essay questions or may be MCQs based. Final term exams have set rule, 50 MCQs are provided for each course. Students attempt the exam offline (on paper), they fill a given answer sheet and results are calculated by computers/scanners. Faculty members are responsible for developing 50 MCQs for each subject and the quality of these questions is the responsibility of faculty member.

KNOU applies formative assessment only at graduate students where assignments and other tests are conducted. No such activities are conducted for undergraduates. Final exams consist only of 50 MCQs and same or two to three papers are used for all the students of KNOU with such a high enrollment. Procedure of quality assurance or peer review of developed paper is not formally conducted.

4. Technology and Infrastructure

- **Digital Media Center:** Digital Media Center of KNOU is synchronizing the educational contents of KNOU to strengthen for lifelong learning. All the contents of multiple media like broadcasting media and e-learning have been merged to make optimum use. The provision of educational content using latest technology like cable/satellite TV, IPTV, the Internet and mobile phones has been made possible by DMC.
- **Quality Assurance:** KNOU is ISO9001 certified.
- **KNOU TV (OUN):** Open University Network is the channel for the dissemination of knowledge for lifelong education in particular and for general knowledge of public in general. Its programs are view via cable TV, satellite TV, and IPTV.

- **History Archives:** Established in 2009 and its purpose is to manage the history.
- **Information & Computer Center:** The Information & Computer Center is managing the whole IT resources of KNOU. It is also managing MIS system of the university.
- **Institute of Distance Education (IDE):** Established in 1977, IDE is undoubtedly the think-tank of KNOU. It is conducting research on distance education and has highly qualified researchers to accomplish the task under the supervision of an experienced director.
- **The Integrated Humanities Center:** working in the field of humanities and conducting interdisciplinary research with other disciplines in addition to studies in the humanities.
- **KNOU Press:** KNOU is facilitating the students to learn more in this mode of education by publishing originally written and translated books from all over the world. Press publishes about 700 types of textbooks written by 900 professors of KNOU and other professors.
- **KNOU Library:** KNOU main Library has 300,000 books and is linked with a network of libraries linking 13 regional campuses and 33 study centers. These libraries (including main library) have about 950,000 books, 110,000 e-books, 670 types of national and international databases and academic publications and other diverse academic information. Moreover, KNOU has subscribed to 5000 scientific e-journals to supplement its students. The reading rooms of these libraries are equipped with 3,600 seats. A separate library is available for the faculty and staff in the main campus.
- **The KNOU Weekly Newspaper:** KNOU Newspaper publishes the ‘KNOU Weekly Newspaper’ and ‘KNOU Special Lecture’ it prints about 180,000 copies per week.
- KNOU has 13 regional campuses and 36 study centers to provide all the facilities to its students.

KNOU is well equipped with the modern technology impart education to distant students. KNOU uses diverse media like cable/satellite TV, IPTV, the Internet and mobile phones to provide learning material to its students. KNOU currently enrolls about 172680 students, and for these students KNOU has 13 regional centers and 36 study centers. KNOU has Institute of Distance Education (IDE) established in 1977 considered to be the think-tank of university.

By assessing the infrastructure available and technology used by KNOU it is well documented that KNOU has capabilities and resources to impart quality education.

5. Students

Students’ perceived satisfaction and learning received from the university determine the real quality of an institution as students are the output of any university and they are best judges to comment in this regard.

Two dimensions of students have been addressed here; composition and alumni satisfaction.

Table 3: Students’ Composition According to Program

Undergraduate	171602
Graduate	1,078
Total	172680

Source: <http://www.knou.ac.kr>

Table 3 shows that there are very few students enrolled in graduate programs (.0062%) and most of the students are enrolled in undergraduate programs.

Table 4: Students' Composition According to Gender

Gender	Strength	Percentage
Male	54,532	31.6%
Female	118,148	68.4%
Total	172680	

Source: <http://www.knou.ac.kr>

According to Table 4, majority of the students at KNOU are females 68.4%

Table 5: Students' Composition According to Profession

Status	Strength	Percentage
Farmers/Fishermen	848	0.49
Educational Sector	12061	6.98
Company Employees	54233	31.41
Businessmen	9581	5.55
Politicians/journalists/artists/religious leaders etc	2990	1.73
Housewives	29854	17.29
Full Time Students	5085	2.94
Civil Servants/career soldiers/public enterprise	12162	7.04
Medical Sector	7491	4.34
Others	38375	22.22
Total	172680	

Source: <http://www.knou.ac.kr>

Table 5 shows the composition of KNOU students enrolled, and it is obvious the company employees (31.41%) and housewives (17.29%) have the highest enrollment at KNOU, which shows popularity of KNOU among working people and families alike.

- Till August 2011 KNOU had produced 508,836 graduates.

An alumni survey was conducted by KNOU researchers in 2009 and was published in 2010. The respondents consisted of graduates of past five years. An email with a link was sent to 124491 graduates and responses from 13578 students were received that showed 10.9% response rate (Hwang & Nam, 2010).

Table 6: Alumni Composition According to Gender

Male	4565
Female	9013
Total	13578

Source: KNOU alumni survey

According to table 6 about 66% of the alumni who participated in the survey were females. This is in accordance with the overall population of females in KNOU and it makes sample more representative of the population.

Table 7: Satisfaction with KNOU

Dimension	Not Satisfactory at All	Not Very Satisfactory	Average	Satisfactory	Very Satisfactory
Satisfaction with career and vocational education	3240	3729	4784	1328	301
Satisfaction with the relationship with peers and seniors/juniors	2265	3506	4259	2527	821
Satisfaction with the relationship with professors	2601	3969	4497	1914	425
Satisfaction with educational contents	207	877	4994	5985	1344
Satisfaction with administrative services	531	1714	6023	4495	649

Source: KNOU alumni survey

Table 7 gives summary of the alumni survey responses, it can be seen that satisfaction with the educational contents and administrative services is highest among the all dimensions of alumni satisfaction.

Table 8: Summary

Dimension	No. of Cases	Average	SD
Satisfaction with career and vocational education	13383	2.38	1.026
Satisfaction with the relationship with peers and seniors/juniors	13378	2.71	1.136
Satisfaction with the relationship with professors	13406	2.52	1.055
Satisfaction with educational contents	13407	3.55	.819
Satisfaction with administrative services	13412	3.22	.874

Source: KNOU alumni survey

- Table 8 provides average and standard deviation of the responses of alumni survey.
- Graduates of KNOU have recorded an overall negative response about their satisfaction with career and vocational education. It means that these graduates faced difficulty in finding jobs. According to Hwang and Nam (2010) younger students showed lower satisfaction while older students showed higher satisfaction. This is due to the fact that younger students were in quest of finding jobs while older ones were mostly employed.

- Respondents have shown overall low satisfaction with the relationship with peers and seniors/juniors (though it is slightly better than the satisfaction with career). This shows that students have low level of cooperative relationship with each other. Again Hwang and Nam (2010) found similar relationship between age and satisfaction with other students, students in 20s and 30s specially had low satisfaction with other students.
- A low average of 2.52 is obtained in satisfaction with the relationship with professors. Majority of the students have shown negative trend towards the relationship with the faculty. Major reason of this low satisfaction may be the low interaction of students and teachers. Lower the personal interaction with teachers lower will be students' relation or bonding with the teachers and this is the dilemma of distance education. Students have no or very limited interaction and this causes the lack of reliance and personal attraction towards teachers. Teachers in traditional universities have close interaction with the students that results in trust and satisfaction between student and teacher.
- Generally, graduates have shown higher satisfaction with the educational contents provided by KNOU. This shows that KNOU is providing up to date and easy to understand educational material to cater the needs of its very diverse population of students.
- Satisfaction with administrative services is also better with an average 3.22. This shows that KNOU is addressing the issues of students adequately; otherwise, generally students seem less satisfied rather dissatisfied by the administrative support.

Conclusion

Five dimensions of quality comprising Curriculum Development, Faculty, Assessment & Evaluation, Technology and Infrastructure and Students were analyzed. It was found that Korea National Open University (KNOU) has high levels of quality standards. KNOU has a large number of students to cater, yet they have adequate infra-structure and qualified faculty to disseminate quality education.

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AN INVESTIGATION ON MASTER TEACHER'S EVALUATION ON STUDENT TEACHERS PERFORMANCE AT THE END OF TEACHING PRACTICE STAGE - I

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Abstract

“Teacher Education” has been emphasized as a major policy initiative towards the enhancement of quality improvement of schools in Sri Lanka. No education system can be better than the quality of its teachers. In order to enhance the quality of teachers, teacher training plays a vital role. Many higher educational institutes offer teacher training programmes island wide. The Open University of Sri Lanka (OUSL) is one of the pioneer institutes which offer teacher education programmes via distance mode. The Post Graduate Diploma Education Programme (PGDE) is one of the popular programmes offered by the OUSL. In this programme Teaching Practice component is significant. It is being offered in two stages. Stage I is evaluated by an external academic named as a Master Teacher, under the guidance and supervision of the department. During the teaching practice stage-I, master teachers are supposed to send evaluation progress of the teaching practice of the student teachers. The study focused on Investigation on Master Teacher's Evaluation on Student Performance during Teaching Practice Stage I. The sample consisted of randomly selected 300 evaluation sheets sent by the master teachers on the student teachers' performance at the end of the teaching practice Stage I. From the selected sample interviews were conducted with randomly selected 10% of master teachers and 25% of student teachers. Simple descriptive statistical methods were implemented in analyzing data. The finding showed that master teachers were identified that majority student teachers have shown interest in keeping reflective entries at the end of each teaching session. It was further revealed that the majority of student teachers were capable of selecting appropriate teaching aids and incorporating the selected aid accordingly into the teaching process. In some instances student teachers were unable to get the students' attention with the utilization of the teaching aids. Accordingly, some students were capable of selecting appropriate teaching methods and techniques to enhance teaching process while some of them were focused on continuing the traditional teaching methods. The master teachers have identified, though this programme is offered in distance mode, the contact sessions were able to provide necessary competencies to enhance teaching skills among student teachers. They have observed that the student teacher personality and soft skills have been developed gradually during the teaching practice stage – I though there were some shortcomings during the process.

Key Words: *Student Performance, Teaching Practice, Master Teacher, Open and distance learning*

Introduction

Teacher education plays a vital role in the field of education. The Dakar Framework recognized the preeminent role of teachers in providing basic education of good quality. It stressed that, to achieve EFA, governments need to enhance the status, morale and professionalism of teachers and enable them to participate in actions affecting their professional lives and teaching environments. (UNESCO, 2014c). With in Sri Lankan context teacher development is considered as an important area to be developed. In order enhance the quality teachers in the profession universities and educational institutes have taken the responsibility. The figure 1 exhibits the existing universities and educational institutes which offer teacher development programmes in Sri Lanka.

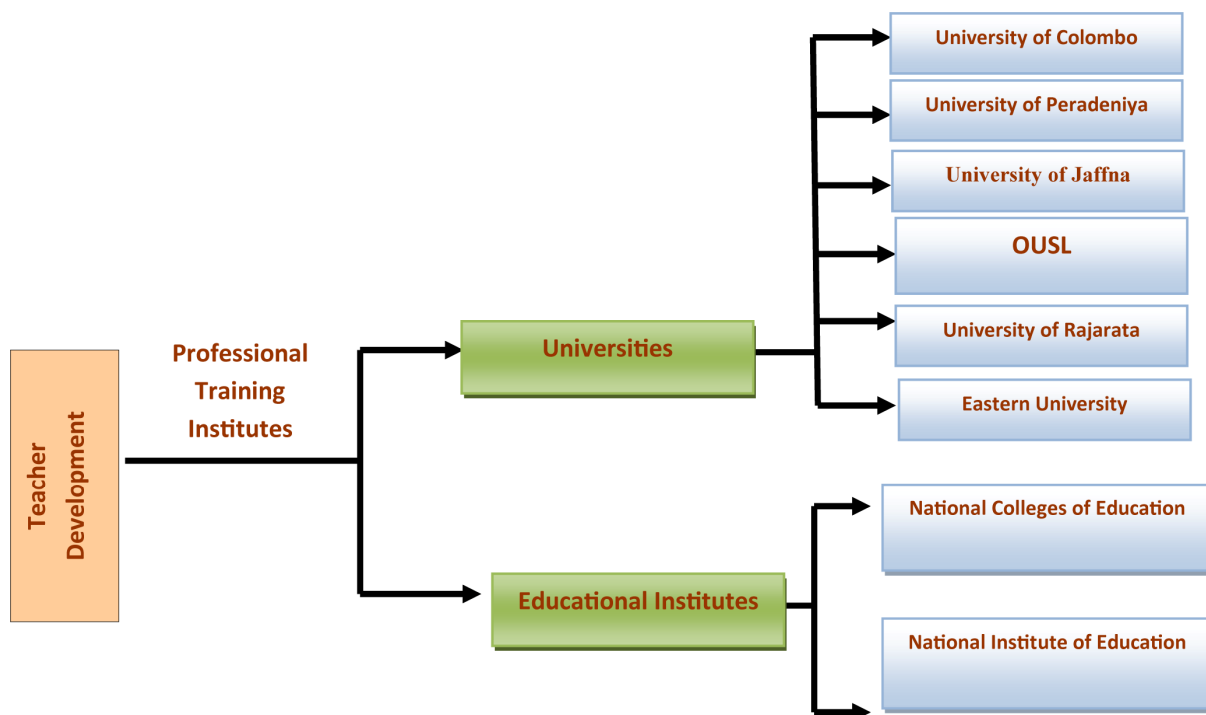


Figure I: Institutes which offer teacher development programmes in Sri Lanka

The Open University of Sri Lanka (OUSL) is one of the key organizations, which involved in offering teacher education programmes via open and distance mode. OUSL offers Post Graduate Diploma in Education Programme (PGDE) in order to enhance the professionalism among teachers in the field of Education.

In this programme teaching practice is the most important component. Student teachers were able to practice the theory they learn during their teaching practice period. In this programme student teachers taught theoretical aspect in education and then they will engage in teaching practice. The teaching practice will be consisted in two stages. Stage I is where the student teachers will engage in teaching practice in their own school. During this period student teachers were able to get support from a master teacher, an outside person who is qualified in the field of education. During teaching practice Stage II a university academic will evaluate student performance in this regard.

During the teaching practice stage I, master teacher performs an important role. Within this programme master teacher is expected to observe student performance at least five times during the ten weeks period of teaching practice. The objectives of teaching practice component is mentioned below:

- (i) Develop skills and competencies required to facilitate the teaching-learning process in primary and secondary classrooms.
- (ii) Apply the principles you have learnt from the courses to facilitate a meaningful change among learners in the teaching learning process.
- (iii) Write schemes of work and lesson notes using appropriate formats and conceptual frameworks that will facilitate the teaching-learning process.
- (iv) Select and use a variety of teaching strategies and instructional resources that are appropriate to achieve the objectives stated in the lesson plan.

- (v) Study and diagnose learning difficulties of pupils and provide guidance and take remedial action those who need them.
- (vi) Apply the principles of evaluation in assessing the effectiveness of your teaching as well as the progress of your pupils.
- (vii) Participate actively and effectively in various instructional and other programmes and Activities of the school.
- (viii) Establish good human relations with the students, staff, parents and other members of the school community.
- (ix) Expand opportunities to participate in co-curricular activities in the school.

During this period it is expected to maintain continues discussions for improvement of student teachers teaching skills.

In different teacher educational context around the world master teacher plays a significant role. In the State Board of Education of Ohio in the Ohio Department of Education (2007) defines Master Teacher as “A master teacher demonstrates excellence inside and outside of the classroom through consistent leadership and focused collaboration to maximize student learning. A Master Teacher strives for distinguished teaching and continued professional growth”. Further the State Board of Education of Ohio explains their performance specifically as follows:

1. Teachers understand student learning and development, and respect the diversity of the students they teach.
2. Teachers know and understand the content area for which they have instructional responsibility.
3. Teachers understand and use varied assessments to inform instruction, evaluate and ensure student learning.
4. Teachers plan and deliver effective instruction that advances the learning of each individual student.
5. Teachers create learning environments that promote high levels of learning and achievement for all students.
6. Teachers collaborate and communicate with students, parents, other educators, administrators and the community to support student learning.
7. Teachers assume responsibility for professional growth, performance, and involvement as an individual and as a member of a learning community.

Background to the Study

Post Graduate Diploma in Education Programme which is offered by the OUSL is one of the most popular teacher training programmes in Sri Lanka. The principle goal of this programme is to provide professional training to graduate teachers and other graduates who are in the field of Education. Teaching practice component is designed to enhance their professional skills in teaching process. During the Teaching practice Stage I student teachers are expected to enhance their teaching skills under the guidance and supervision of the Master teacher. Master teacher is appointed by the guidance and supervision of the central campus. The students who are attached to this programme is widely spread around the island. Assigned master teachers for each student teacher is also scattered around

the country. In order to maintain the quality of the process during teaching practice stage I, continues monitoring mechanism is needed. Before commencing teaching practice stage I all the master teachers were called for a workshop conducted by the academics in the central campus. This workshop focuses on explaining Master teachers' roles and responsibilities when they engage in supervision. During this period master teachers are expected to send different monitoring reports based on the student performance. At the end of the period master teachers are supposed to send an evaluation based on the student performance. The current study focuses on investigating the master teacher's evaluation on student teachers performance at the end of teaching practice stage I.

Significance of the Study

The researchers were the coordinators in this programme. In order to further improve the performance of the student-teachers in their teaching practice, master teachers already expressed their ideas and current status of their student-teachers in the teaching learning process.

Using these research findings, the Faculty of education has now undertaken rigorous self-evaluation of their programme, in order to improve the quality of the programme as well as the standards and experiences of the student teachers. In addition to that, these findings will help to identify the important part played by the individual teachers in the classroom.

This study gives overall views about the strengths and weaknesses shown by the student teachers during the teaching practice stage I; based on these, the faculty can take measures to improve the strengths and to overcome the weaknesses of the teaching practice component.

Further, this study can be used primarily for the purpose of improving the performance level of individual student-teachers according to their current level, and to support their personal development through early and continuous professional development. It is not only intended to be part of the inspection process or intended to be used solely for the purpose of appraisal. Through the evaluation form, the faculty will be able to identify the strengths in performance of the student-teachers and the effectiveness of the teaching practice component, and this will help improve future activities of the programme.

In addition, the aspects outlined in the evaluation form will assist the Faculty to identify areas for improvement in the teaching practice component, and also take the first steps towards implementing necessary improvements through professional development.

Researchers hope to provide insights to teacher educators into the development of a comprehensive instructional process for the benefit of student-teachers in the PGDE and in similar programmes in order to foster a willingness in the student-teachers to evaluate their own work, to recognize the strengths and weaknesses in their teaching, and encourage their enthusiasm to develop professionally the areas they have identified for improvement.

Methodology

The population consisted as all the student teachers registered for the academic year 2014/2015 in the Post Graduate Diploma in Education Programme. A random sample of 300 student evaluation sheets sent by the master teachers was selected as the sample in the study. In addition a focus group interviews were conducted with the 25% of randomly selected students and 10% of master teachers attached to the different regional and study centres. Gathered data were analyzed and presented in using qualitative and quantitative methods.

Research Objectives

1. What are the MT observation on student reflection notes on the completed lesson plans.
2. Identify the MT observations on strengthens and weakness of the teaching/learning aids used by the student teachers.
3. Identify the MT observations on the methods/techniques implemented by the students teachers at the teaching practice stage I.
4. Identify the MT perception on student personality.
5. Examine the suggestion made by the master teachers to enhance the teaching learning process among student teachers.

Results and Discussion

During the teaching practice period student teachers are expected to work according to a lesson plan prepared by them following the guidelines provided. After working according to the lesson plan prepared by them it is expected to write a reflective entry based on the experience they obtained. By reflection it is expected student teachers to recall strengthen and weakness within themselves. By practicing it is expected to enhance skills in teaching learning process. It was examined what master teachers have observed on the reflective entries maintained by the student teachers on their own teaching – learning process during teaching practice stage I.

Table No 1: Master Teacher's Observations on Student Reflective Notes

Comments Made by the Master Teacher	Number	%
Written in a systematic and clear manner	66	22
Very poor expression. Instructed on how to write accordingly	86	29
Shows interest and follow the instruction provided. Gradual improvement is visible	24	08
Good performance in writing reflective entry. Cognitive skills were improved.	84	28
Satisfactory improvement in writing reflections	36	12
Not responded	04	01
Total	300	100

The students were updated on how to write reflections at the beginning of the programme. It was revealed that 28% in the sample had obtained ability in writing reflective entries. The master teachers have observed that those students were able to enhance their cognitive skills in the teaching learning process. This finding is supported by a research conducted by Ong in Singapore. 12% in the sample has shown satisfactory improvement. But it is significant that master teachers have observed that majority (29%) in the sample is lacking in skill in writing reflections. Master teachers have stated that majority of students have reported what they have done during the teaching learning process, but not a reflection of their own. Further the student teachers have used third person as which should be corrected as first person. This further reveals that majority of students were not in a positions to identify their own strengthen and weaknesses. Master teachers have further observed that 8% in the sample were shown an interest in improving their skills on writing reflection and improve their teaching and learning process based on their own reflection. By engage in reflection it is expected the teachers to be reflective practitioners. As reflective practitioners it is expected that the student teachers will enhance soft skills such as leadership, communication, critical thinking in their professional life. At the focus group discussion it was further revealed that student teachers do agree

that they lack in competency in reflective process and reflective writing. This finding is not in line with the research conducted by White in 2012. Student teachers were happy if they could have separate instructions in written before commencing teaching practice. Some stated that some master teachers were not competent enough to make them aware in writing reflective entries. It was further revealed that master teachers were not satisfied with the guidance provided by the department in this regard.

Integrating teaching aids in to teaching learning process is important. Student teachers were encouraged to incorporate innovative teaching aids in their teaching practice stage I and master teachers were instructed to identify such innovative teaching aids in to administrative processes in the central campus. Based on the given information, such innovative teaching aids were evaluated by the academic and best teaching aids will awarded with certificates and prizes. The table 2 states the strengths and weakness in the used aids by the student teachers.

Table 02: Teaching Aids Included with the Lesson Plan

Strengthens	Number	%	Weaknesses	Number	%
Appropriate teaching aids were used	74	25	Lack of motivation in using teaching aids	66	22
Creative and innovative teaching aids were used	20	7	Few print materials were used	38	13
Graphics/Artistic work were used	12	4	Lack of creativity	12	4
Technical equipment's were used	10	3	Existing materials in the laboratory was used	12	4
Sufficient number of teaching aids were used	8	3	Lack of using appropriate colures	8	3
Used aids were able to capture student attention	4	1	Few Technical equipment's were used all the time	4	1

Before starting teaching practice students were engaged in the course Education Technology, 18 hour sessions covering on lesson planning and preparing, using of teaching learning aids. Based on the prior leaning it was revealed that 25% in the sample were able to enhance their skill in using appropriate teaching aids in to teaching learning process. It is also revealed those teachers were motivated in using the raw materials available in their school environment. It was also revealed that 7% in the sample were motivated in preparing creative and innovative teaching aids. The innovative and creativity has been based on very simple strategies. Though the strategies were very simple, the quality of the aid has been advanced. Though all the student teachers were participated in same sessions on Educational Technology, it is significant that 22% in the sample have used teaching aids which lack in motivating students in to teaching learning process. It is also 13% were used only the print materials though out their teaching learning process. At the focus group discussion it was revealed that the students attached to study centres were not able to get the same content and experience during the contact sessions. The student expected to receive the videos and other relevant materials in their centres too. At the focus group discussion it was further reveled apart from the technology contact session student teachers were happy to have a separate session on preparing teaching aids, use and incorporate them with appropriate methods in teaching. It is also revealed the equal of 4% in the sample lacking preparing creative teaching aids all times and some science teachers were just used the existing materials in the laboratory in a monotonous manner. Master teachers believed that teachers should have positive attitude towards teaching in all time. They made the following suggestions to enhance the existing situation.

Table 03: The Suggestions Made by the Master Teachers to Improve Teaching Learning Aids

Suggestion	No	%
Enhance knowledge on preparing appropriate teaching aids	82	27
Uplift the hidden talents on creativity	34	11
Motivate in using modern technological equipments	50	17
Provide guidance to use teaching aids with diversity	46	15
Motivate students to use natural aids	04	1
Involve students in preparing teaching aides	06	2
Provide needful resources to prepare teaching aids	08	3

27% Master teachers suggest the department should pay more attention on enhancing knowledge on preparing appropriate teaching aids. In addition they suggest that contact session on educational technology should link with the AV materials produced by the OUSL on Educational Technology. In addition master teachers focus that activities should be design in order to enhance the hidden talents on creativity among student teachers. Master teachers (17%) feels that student teachers should motivate using modern technological equipment's when they engage in teaching learning process.

Using appropriate teaching aids does enough to create a positive teaching situation. It is important to select appropriate teaching methods and techniques to achieve the learning outcomes in the lesson. Table 04 illustrate the master teachers observations on strengthens and weaknesses of the teaching methods and techniques used by the student teachers.

Table 04: Strengthens and Weaknesses of the Teaching Methods and Techniques Used

Strengthens	Number	%	Weaknesses	Number	%
Student centered methods were used	80	27	Preferred in applying teacher centre methods	40	13
Based on the given instructions try to apply new methods	26	9	Monotony in applied methods	16	5
Psychological aspect was conceded when selecting	16	5	Lack of knowledge about the methods	18	6
			Backward students were neglected	14	5

27% of master teachers state that student teachers were able to select appropriate student centered methods, such as group method, projects etc. In addition it is significant that (9%) some students were motivated apply new methods in to teaching learning process. In controversy 13% in the sample have used teacher centered methods in most of the time. As they use teacher centered methods teaching learning process seemed stagnated.

Selection of appropriate teaching aid, method and technique will enhance by the teacher personality. Table 5 illustrates the master teacher's perception on the personality of student teachers.

Table 05: Master Teachers Perception on the Personality of Student Teachers

Personality Trait	Number	%
Very good ability in enhancing teacher – student interaction	144	48
Classroom management skills should be improved	46	15
Communication skills should be improved	24	8
Commitment towards teaching should be improved	06	2
All attributes should be improved	14	5
Good Personality	76	25
Teacher – student interaction should be improved	03	1

It was revealed that 48% of teachers had a very good ability in enhancing teacher – student interaction while they engage in teaching learning process. Further 25% in the sample were with good personality. At the focus group discussion it was revealed that master teachers feel that student personality will be further developed with the experience they obtained in the process.

In order to overcome the weaknesses in the existing situation master teachers made following suggestions.

Table 06: Suggestions made by the master teachers

Suggestion	Number	%
Instruct students on how to incorporate practical teaching methods in line with teaching learning process	66	22
Update knowledge on theoretical aspect on teaching methods	36	12
Apply methods which could facilitate keeping attention on TLP	16	5
New methods should be incorporate	22	7
A workshop could be conduct on teaching methods	16	5
Integrate modern technology with teaching methods	14	5

It was revealed that 22% of master teachers feel that further instructions should be provided to students on how to incorporate practical teaching methods in line with teaching learning process. They suggest that day school academics could take the lead in this regard. In addition 5% of master teachers suggest that a separate workshop on teaching aids and methods incorporating modern technology.

Conclusion & Suggestions

Overall it was revealed this process is very important and useful for the professional development among the teachers in the field of education. According to the master teachers point of view majority of student teachers were lacking skills related to teaching process and they need further support and guidance to enhance the competencies related to teaching. However the master teachers observed that many student teachers perform a good personality while they teach. To enhance the quality in this regard the following suggestions are made;

- Time allocated for making aware on reflective writing and use of teachings should increased.
- A proper mechanism should be introduce to identify and monitor how student teachers have enhance their critical thinking and soft skills after being reflective practitioners.
- During the Master teachers workshops, the department should pay more attention creates awareness on how to write reflections and it's applicability in to teaching learning process. Further measures should be take to update master teachers on effective use and create innovative teaching aids.
- A mechanism should be implemented to enhance the positive attitudes towards teaching profession among teachers

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LEARNERS' SATISFACTION AND PERFORMANCE IN A BLENDED LEARNING ENVIRONMENT

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Abstract

This paper discussed learners' satisfaction and performance in a blended learning environment under an Open and Distance Learning (ODL) University in Malaysia. Total useable questionnaires were 2283 comprising of undergraduate learners from 3 cohorts. The results revealed that there is a significant correlation between students' performance and satisfaction with the content of learning materials, assessment, facilitators or tutors presence and the services rendered at the learning centres. On a Likert Scale of 4, the study also indicated that all the independent variables mean were high ranging between 16.3 to 12.9. This suggests that the students were satisfied with the university's learning materials, assessment, facilitator or tutors presence, services given at the learning centres and physical setting of the learning centres. However, only two variables have relationship with the learners performance namely: assessment and services received at the learning centres. This study implies to policy makers and academic leaders at the university that they should continue to provide superlative support in providing most excellent resources and services but also need to find creative ways in motivating better performance among their learners. Future study should consider inclusion of other variables; such as alternative modes of learning and a nationwide survey covering samples from the whole population of all the universities that provide Open and Distance Learning facility in Malaysia that would be more significant in making generalizations.

Keywords: *Open and Distance Learning (ODL) Universities, Malaysia, Performance, Satisfaction*

1.0 Introduction

Globalization provides several challenges to every country in the world; especially to developing countries, the same as Malaysia. By the year 2020, Malaysia's vision is to achieve the status as a developed country; which can be only be fulfilled if certain objectives were met; namely - high income economy, inclusiveness and sustainability. With the growing population of 34.3 million and the expected working age population between 15 to 64 years to raise up to 26.2 million by the year 2020, the issue of education and employment become critical. Although, formal education in universities and colleges in Malaysia continues to be an important component of the national education system, however, the development of human capital may also be increased through education for long life which has created an opportunity for the working citizens to further their education while working. Currently, the changes that take place is much needed; that open up a new avenue for the workforce to gain the rapidly budding knowledge, skills and competency. Against this circumstantial, besides the conventional learning, blended learning has a role to play in developing knowledge workers. This is especially true when the existing workforces are required to enhance their knowledge in order to remain sustainable in the workplace. Presently, the awareness of studying while working are depicted by the open and distance learning universities providers such as Open University Malaysia (OUM), Asia e University (AeU), Wawasan University (WOU) and others.

Accordingly, blended learning has become a significant part of the higher learning in United States of America (USA); as well as other parts of the world; including in Malaysia (Allen & Seaman, 2013; Tahar, Mokhtar, Jaafar, Sukiman & Ismail, 2013). The blended learning environment is a situation where learners have the flexibility in acquiring knowledge through a combination of two modes of learning namely: the traditional face to face tutorials and through online interaction that can be implemented using any technology platform. However, due to its flexibility, like any other courses offered online, it was reported that the performance of the student were usually low as compared to the conventional learning mode. In conventional learning environments, students have the luxury of the two-way communication and getting immediate responses from their tutors or lecturers. Consequently, learners' dropping from their study as a result of their performance may have impact on the sustainability of the university although it could be other factors such as inability to pay their tuition fees or family and personal commitments.

Past studies have found that performance have a positive relationship with variables such as assistance with assessment by facilitators (Wolf, Wood-Kutanowitz & Ashkenazi, 2014), on the job training (Buted, Felican & Manzano, 2014). There were also studies that indicated no relationship was found with regards to students' performance with social media usage (Alwagait, Shahzad & Alim, 2014) and learning mode (Adam & Nel, 2009). Nevertheless, there are plethora studies on student satisfaction in relations to factors that is connected to performance such as technology, course quality, internet efficacy and instructor timely response (Sun, Tsai, Finger, Chen & Yeh, 2007) in relation to online tools (Small, Felicity, Dowell, David, Simmons & Peter, 2012) or satisfaction with use of blackboard LMS in online learning (Al-Maliki, Abdul Karim & Alallah, 2015). In filling this gap, this study will examine the performance of learners' measured by their CGPA scores in a blended learning environment in relation to their satisfaction with the content of learning materials, assessment, facilitator or tutors presence, services rendered at the learning centres and the physical facilities found in the learning centers.

2.0 Literature Review

Past study by Wolff et al. (2014) in a community college in USA found that the two most significant outcome of students' performance as measured by the Grade Point Average (GPA) were related to mathematic, reading and writing proficiency. Another likely success factor is the hours spend in studying as indicated to be more than 12 hours and being unemployed. However, when comes to blended or traditional students, they found there is no differences in their performance which supported th past study conducted by Morris, Wu and Funnegan (2005) and Urtel (2008). Studies by Driscoll, Jicha, Hunt, Tichavsky and Thompson (2012) and Adam and Nel (2009) also established that mode of delivery has no impact on students' performance.

Du and Wu (2013) argued that with the present of efficient instructions given by the tutors online in guiding learners in the blended learning environment, there is no relationship between learners' satisfaction with instructors and their performance at the universities. However the study indicated that the students' performance would be further enhance as their satisfaction with the tutors' facilitation is higher.

There are other tools used by past scholars in measuring learners' performance for example Rusticus, Worthington, Wilson and Joughin (2014) used the Medical School Learning Environment Survey (MSLES) to measure students' performance in medical schools in USA. Among the dimension used are medical and practical interests, emotional climax, flexibility, learning experience, organisation, nurturance and student interaction. Though the correlation between the MSLES and students' performance was positive, although small, but the study implied that no matter what is the academic environment, the performance of students; especially in medical schools remain the same, more due to other variables such as their attitudes and high motivation to excel in their academic performance.

Research on academic facilitation which is similar to teachers; conducted online has been ongoing and the results has been fairly consistence. Anderson, Liam, Garrison and Archer (2001) had suggested that when there is a strong support from facilitators, the collaboration would have been better among the learners. In other words, facilitators are the initiators to encourage online student activities that would eventually lead to better performance.

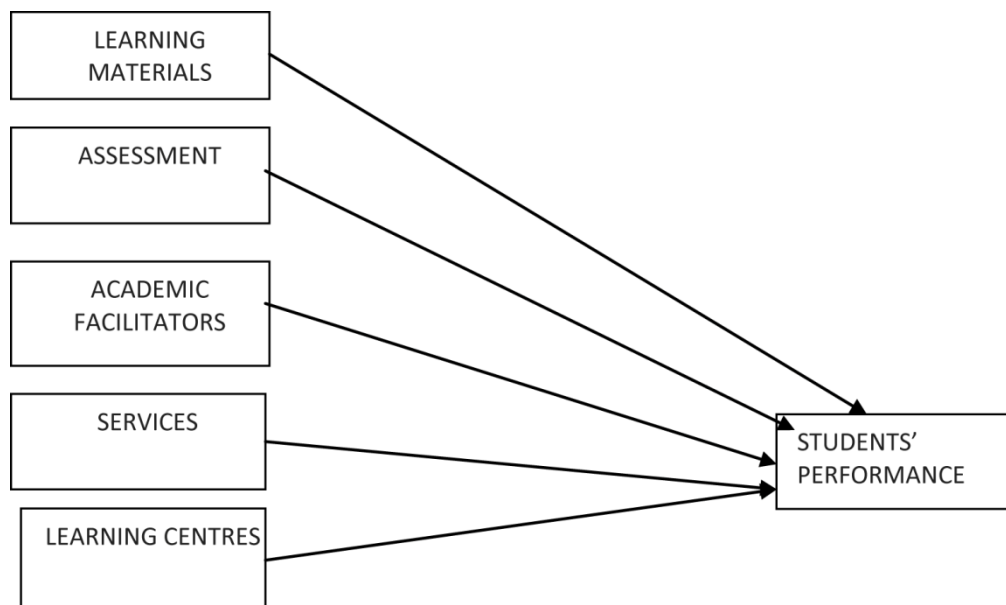
The importance of basic amenities such as availability of internet and Wi-Fi facilities has significant impact on the accessibility of learning materials at the university (Altameem, 2013). This has supported the study handled by Piccoli, Ahmad and Ives (2000); that postulated support services is crucial to learners in the form of easy accessibility to retrieve course materials and assignments. However, if learners shun away from computer usage, it will not only affect their performance since most of the learning and teaching is done online (Sun, Finger, Chen & Yeh, 2006). A study in the Malaysia context done by Wahab et al. (2014), fully supported the notion that if the learners perceive that if there is positive ease of usage of the iLearn (a combination of several learning and teaching technologies such as Moodle and Blackboard that form a facility allowing academics and students to interact as part of a collaborative, flexible learning and teaching experience) the students' academic performance can be further enhance marginally.

Sun et al. (2006) supported Thurmond et al. (2002) study that variety of assessment methods and the delivery process can assist in not only satisfying the students but also the learners' performance. By having diversified assessment, learners are being challenged mentally and this may excite them. The studies also implied that a strong relationship of high quality of teaching materials, course design and interaction discussion arrangements lead to higher satisfaction. Consequently, better satisfaction can lead to better achievement.

Studies on three universities in Saudi Arabia by Darojat, Nilson and Kaufman (2015) reported that all the universities that they study have provided full support for tutors in enhancing their skills, not only subject matter but also in developing and designing course matter and assessment. This is similar to conventional universities where emphasize on teaching and learning are crucial, yet the non-academic staffs at a blended learning environment have more complex responsibilities than traditional university. The staff at the learning centres will provide service in delivery of materials, linkages with multimedia communication corporation and also with regional and local deliveries (Darojat, Nilson & Kaufman, 2015). Besides, they have also to assist in the course materials and organise student bodies. The activities also encompasses organisational training workshops for assessment and tutoring for academic staff, student registration and providing financial assistance to students. In most blended learning environments, the non-academic staff form a major part of the human resource component as most of the tutors are part-timers.

3.0 Research Framework

The framework of this study is depicted in Figure 1 below:



To guide this study, the research framework was developed based on previous literatures. Twenty-four items were developed that were grouped into five dimensions. The items was designed to demonstrate the effect of the dependent variable on to the independent variables. The dependent variable in this research are cumulative grade point average scores (CGPA) of learners earned at the end of the semester and the independent variables are academic facilitators, learning materials, assessment, services and learning centres which will be measured on individual basis. The main research objective is as follows:

1. To investigate which of the variables have a critical effect on the performance of the learners

4.0 Research Design and Methodology

A quantitative cross sectional survey research was employed in this study. The survey was conducted on one private open and distance learning university in Malaysia. The respondents are in-service teachers that are taking various undergraduate programs at the university to earn a bachelor degree at the end of the study. The survey was conducted online where the questionnaires were send to learners via MyPLS (My Personalized Learning Space) which is the e-learning platform. A total of 2283 responded that comprised 70 percent from the total population of in-service teachers doing the bachelor program. The factor that encourage the good respond was that the students were not allowed to register for the next semester subjects if they have not respond to the questionnaire. The university was anxious to get the feedback for their improvement purposes.

The questionnaire items were developed by the university based on past literatures and feedbacks from the academic management committee comprising of academics of the university. The questionnaires were also previously employed to students of other programs by the university. A validity and reliability test were undertaken and it indicates that the instrument is fit for use. In developing the questionnaire consideration on the ease of use and simplicity of the question were taken into deep consideration (Ziethman, 2014). The instrument measures variables on a Likert Scale of 4 points from disagree to highly agreed.

The reliability of the measurement items for all the variables as indicate in Table 1 below, was assessed by an internal consistency check. The Cronbach alpha from the test capitulated a record between 0.78 to 0.84 which indicate that the instrument is stable and consistent; which is above the cut-off line of reliability (Nunnally and Berstein, 1994 & Nunnally,1978). Since content validity of the instrument was taken care earlier no changes were being done to any of the items.

Table 1: Reliability Test for the Various Dimension

	Cronbach's Alpha
Performance (Cumulative Grade Point Scores)	0.84
Learning Materials	0.80
Academic Facilitators	0.80
Services	0.79
Learning Centres	0.86
Assessment	0.78

5.0 Discussion of Findings

The Pearson Product-Moment correlation extracted is as seen in Table 2 for all the five dimensions (academic facilitators, learning materials, assessment, services and learning centres) disclosed both negative and positive correlation at a significant 0.001 level. According to Dillon, Madden and Firtle, (1993), the Pearson correlation coefficient (r) ranges limits of value is between -1 to +1. Positive 1 indicates a perfect positive correlation and the negative correlation indicates otherwise. As a rule of thumb, the correlation coefficients that exceed 0.8 (very strong correlation) are likely to result in multicollinearity (Benny & Feldman, 1985). For this study the range of effect size is small (Cohen, 1988 & 1992). Results of the correlation analysis indicate no violation of the assumption as the absolute value is between the ranges of 0.1 to 0.8 which is acceptable value (Benny & Feldman, 1985). Academic facilitator, services and learning centres were found to have a negative correlation with students CGPA. The services ($r = -0.055$, $p < 0.001$) has the highest value but negative correlation with the dependent variables .

The highest mean was recorded for academic facilitator ($M = 16.922$, $SD = 2.507$) followed by learning centres ($M = 14.588$, $SD = 2.971$). The other two variables; learning materials ($M = 12.852$, $SD = 2.033$) and services ($M = 12.880$, $SD = 2.066$) indicated slightly above average. The overall mean for the Cumulative Grade Point average is quite optimistic with an average of 3.314.

Table 2: Mean, Standard Deviation and Correlations of the Variables

		Mean	Std. Deviation	1	2	3	4	5	6
1	CGPA	3.314	0.353	1.000					
2	Learning Materials	12.852	2.033	0.000	1.000				
3	Academic Facilitators	16.922	2.507	-0.009	0.530	1.000			
4	Services	12.880	2.066	-0.055	0.598	0.598	1.000		
5	Learning Centres	14.588	2.971	-0.017	0.393	0.372	0.525	1.000	
6	Assessment	16.298	2.344	0.007	0.646	0.655	0.609	0.425	1.000

Tables 3 below summarize the demographic profiles of the respondents. The sample also indicates that female respondents represents a slightly higher percentage of the total respondents (69%) when compared to the male respondents (31%). The majority of the respondents were taking programs in Teaching Malay Language in Primary School (77%) while 13 percent were doing Early Childhood Education and 10 percentage acquiring a degree in Teaching English as Second Language (TESL). With reference to their experience in teaching, the samples indicated that those who had teaching experience of between more than 22 years (31%) forms the majority, next group were between 15 to 18 years (22%) and less than 14 years forms the rest of the group (47%). Most of the respondents were learners registered in Semester September 2013 (Cohort 3) (42.59%) followed by registered in Semester September 2012 (Cohort 2) (36.77%) and the rest were learners that registered in Semester March 2012 (Cohort 1) (20.64%).

Table 3: Demographic Statistic (n = 2287)

		Frequency	Percent
Registration	March 2012	472	20.64
	September 2012	974	42.59
	September 2013	841	36.77
Gender	Female	1581	69.13
	Male	706	30.87
Program	TESL	221	9.66
	Malay Language	1758	76.87
	Childhood Education	308	13.47
Teaching Experience	3-6 yr	40	1.75
	7-10 yr	235	10.28
	11-14yr	375	16.41
	15-18yr	501	21.93
	19-22yr	434	18.99
	>22 yr	700	30.63

To investigate which of the variables have a critical effect on the performance of the learners that were measured by their CGPA scores, a stepwise multiple regression analysis was then employed in this study. This method was utilized in view that there were some explanatory variables that might not be relevant in making the predictions for the learners' performance in this case (Sakeran, 2014). Thus it is important that a model fit of use that is only variables that is important should be retained. Parsimony of the study is important for any research in order to be meaningful.

The assumptions for stepwise multiple regression were conducted and reported to have no serious violations. The tolerance statistics revealed that the entire variables under study were in an acceptable range (cut off of .10 as suggested by Tabachnick and Fidell, 2001). Amongst the five variables measuring the learners' satisfaction with the university, two variables were significant at p -value less than 0.05 that predict on learners' performance. The two variables that were seen as vital impacts on learners' performance are services rendered by the university staff and assessment.

The result points out that, the higher the learners rated on their satisfaction on the assessment management the better would be their performance ($\beta = 0.065$, $t = 2.469$, $p < 0.05$). The other variable, services rendered by the university staff have a negative relationship to the performance of the learners at ($\beta = -0.095$, $t = -3.600$, $p < 0.001$). However, the strength of the relationship between the two variables is 0.076 as measured by r value at p -value of 0.05 as seen in Table 4. The coefficient of determination measured by r -square is 0.006 ($F = 6.097$, $P < 0.05$). It demonstrated that services rendered by the university staff and assessment on the subjects taken in the degree program helps to explain only about six percent of the variance in the learners' performance.

Table 4: Coefficient of Variables

Model		Std. Error	Beta	t	Sig.
1	(Constant)	0.047		73.811	0.001
	Services	0.004	-0.055	-2.641	0.008
2	(Constant)	0.055		61.186	0.001***
	Services	0.004	-0.095	-3.600	0.001***
	Assessment	0.004	0.065	2.469	0.014*

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

DV: Performance

Table 5: Assessment and Services Variables and Performance

	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	Sig. F Change
1	0.055	0.003	0.003	0.352	0.003	6.973	0.008
2	0.076	0.006	0.005	0.352	0.003	6.097	0.014

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

DV: Performance

5.0 Conclusion and Implication

This research has its theoretical implication on e-learning management in education in Malaysia. The significant findings do not fully support Wahab et al. (2014) study that suggests services rendered to learners by the support staff and the learning portal were inversely related. The most likely reason is that the sample who being in-service teachers are intellectually intelligent, motivated mentally and being independent learners would care less on the service rendered by the university staff.

This study also supported past studies by Sun et al. (2006) and Thurmond et al. (2002) in rendering that assessment is positive related to high performance of students. In this study, the learners fully agreed that with full support from facilitators in explaining the assignments and guidance given in finishing the courses assisted in their performance. This study also has some limitation in the sampling frame which only considers a particular university and therefore the results cannot be generalized to the whole blended study environments provided under the open and distance learning industry in Malaysia. Future studies should also consider alternative modes of enquires such as employing the longitudinal method of data collection design (e.g. experiments, archival data, observations or interviews) and a nationwide survey covering all samples of students from the e-learning environments provided by all higher institutions of learning in Malaysia. This study could also be replicated within other service industries such as health care, banking services, insurance services that contract online business transactions.

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PERCEPTIONS OF LEARNERS ON CONTINUOUS ASSESSMENT IN DIPLOMA IN EARLY CHILDHOOD EDUCATION AND PRIMARY EDUCATION PROGRAMME IN OPEN UNIVERSITY OF SRI LANKA

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Abstract

Assessment is one of the key factors of the teaching learning process. It is very important that the assessment components must be well designed, well planned, timely delivered and properly managed to increase learners' learning and understanding within the programme of the study. This study attempted to investigate learners' perception on the two methods of continuous assessments; Take Home and Activity Based Day school Assignment of the Diploma in Early Childhood and Primary Education Programme (DECPE) in the Open University of Sri Lanka (OUSL). A questionnaire, focus group discussion and interviews were utilized under the survey design to a randomly selected sample of 100 students who registered in the DECPE Programme 2013/14 in English medium. Quantitative data analysis using SPSS and qualitative data analysis using descriptive methods under several themes showed that majority of learners were in favor of the both methods of continuous assessments. They agreed take home assignments are consistent with the day school with modules, assess not only the subject content but provided room to apply the theories, and interesting but are complex. However the feedback given and time taken for it weren't in favor. Activity based assignment also were viewed as interesting, foster social interaction and self learning and easy to score and improve learners' motivation than take home assignments. The findings concluded that learners hold strong views on both continuous assessment methods and both helped them enhancing learning. Further the study concluded that learners do not receive timely and constructive feedback and have great concerns on the number of assignments to be submitted per day and the complexity of questions. The study suggested conducting an effective mechanism to monitor the questions given and giving constructive feedback to learners.

Keywords: Distance Learning, Continuous Assessment, Learner Perception

Introduction

As a force contributing to social and economic development, open and distance learning is today one of the most rapidly growing fields of education and training. It is fast becoming an accepted and indispensable part of the mainstream of educational systems in both developed and developing countries, with particular importance for the latter (UNESCO, 2000a).

In the Open and Distance Learning, assessment is one of the measures which ensure the quality of open and distance learning. It occupies a vital position in the teaching and learning, certification and acquiring knowledge and skills in a ODL system. It is a sub system of the ODL system which requires a sophisticated and systematic mechanism for managing student assessment (Lekamge, Karunanayaka, Nawarathna, Hewapathirana, Kugamoorthy and Weerakoon, 2015).

Dietel, Herman, and Knuth (1991) define assessment as “any method used to better understand the current knowledge that a student possesses”. It is a process of seeking and interpreting evidence for use of teachers to decide where learners are in their learning (Jones and Tanner, 2006). According to Rowntree (1990) there are two major purposes of assessing students,

- (i) To provide support and feedback to learners and to improve their ongoing learning,
- (ii) To report on what they have already achieved, whether this is a grade or a written assessment.

Assessment is not only for the benefit of the student learning but also it fulfills requirements of other stakeholders involved in the teaching-learning process such as teachers, institutions and community (Nightingale, 1996). Along with the quality of assessment procedures, research also strongly support that timely and effective studies, feedback on assessment components is a crucial element of the learning process (Higgins et al., 2002; Blayney & Freeman, 2004).

This helps learners to monitor their own progress, (ii) feedback from assignments, and (iii) direct feedback and dialogue with counsellors/ tutors during interaction in counseling sessions and laboratory work. Therefore, one can argue that an effective and efficient Formative Assessment system would contribute substantially to improve the excellence of any ODL Programme aimed at professional development of the clientele (Lekamge et al, 2015). For improving the quality and effectiveness of the different types of interactions responsible for teaching-learning process, an effective monitoring and time to time Programme/course evaluation is necessary. The right kind of assessment system increases learning and understanding of learners (Tripathi and Fozdar, 2010). Thus, it was decided to conduct an investigation on learners' perception on continuous assessment components of Diploma in Early Childhood and Primary Education Programme of the Open University of Sri Lanka (OUSL).

Background of the Study

The Diploma in Early Childhood and Primary Education (DECPE) offered by the Department of Early Childhood and Primary Education, Faculty of Education, OUSL, is a two year Programme which enables the participants to perform effectively as teachers/care givers in Early Childhood Education and Primary Education. It is offered both Sinhala and English Mediums in Colombo and Kandy, and only in Sinhala medium in Matara and Anuradhapura Regional Centres. Annually around 1000 students enroll to this Programme. DECPE Programme has two levels; Level 3 and Level 04. Level 03 includes 09 courses which are only subject based and Level 04 includes 6 courses including Teaching Practice in both Preschool and Primary School. The main delivery modes are printed modules and face to face contact sessions.

In the DECPE Programme, the assessment process includes continuous assessment and final examination in both written and practical basis. The continuous assessment process includes two types; Take Home Assignments (THA) and Activity Based Day school Assignment (ABDA). Take home assignments are considered as the main method of assessing student progress. Depending on the credit rating of the courses, student teachers had to complete either three (9 credits) or two (6 credits) assignments satisfactorily to get the eligibility to sit for the final examination. The assignments are set by an internal academic and a large number of visiting academics attached to different regional and study centres engage in marking those assignments using the marking schemes prepared by the setter of each course. In THAs students are given short answer questions and structured essay type questions based on the printed modules to write answers at home.

The ABDAs are conducted at a Day school where students are given an individual and group activity to find answers during the given time. They have to gather answers in groups and conduct presentations at the same day. In order to successfully complete the Programme one must obtain eligibility for all courses by scoring more 40% for all of these at first attempt. For this how learners perceive the continuous assessment system in the Programme is vital for the success-fulness of their achievements. In this paper, it is reported the students' perceptions on the continuous assessment components of the Diploma in Early Childhood Education Programme in the Open University of Sri Lanka.

Objectives of the Study

The following were the objectives of this study,

1. To identify learners' perception on the continuous assessment components of the DECPE Programme.
2. To find out major problems learners face in completing the continuous assessment components of the DECPE Programme.

Research Questions

In order to achieve the above objectives of the study, the following research questions were formulated.

1. How learners' perceive the continuous assessment components of the DECPE Programme?
2. Do learners face problems in completing the continuous assessment components of the DECPE Programme?
3. What are the problems learners face in completing the continuous assessment components of the DECPE Programme.

Significance of the Study

The two components of the continuous assessment of the DECPE Programme help students in preparing them for the final examination. 30% of their eligibility mark is added to calculate to overall mark including 70% from the final written examination. Therefore learners have to take serious concern on the continuous assessment components of the Programme. However, not much has been published to date on students' view and their concerns of continuous assessment components of DECPE Programme. In addition such a study could provide more understanding on the effectiveness of the continuous assessment components of the Programme. This would also help enhancing the quality of the Programme.

Literature Review

What is ODL?

The Open and Distance Learning has emerged as a panacea for all ills faced by educational systems both by developed as well developing countries. It has taken many forms with the integration and advancement of new technology (Gunawardene and Lekamge, 2010). The main feature of the open and distance education is that teachers and learners are separated geographically from one another and the learning material takes the form of the teacher. It tries to expand equal educational opportunities through flexible and open methodologies for those who are disadvantaged and do not have access to traditional classroom based learning. ODL is defined as an evolution of the Distance Education from a teacher-centric to a much more learner-centric model, the roles and activities of instructors and other learner support providers have changed to being more proactive than reactive" (Brindley et al : 2004). In the ODL system, assessment is considered as a learning tool which has the capacity to motivate students to engage in the learning process and to evaluate their achievement and provide necessary feedback.

Assessment and Open Distance Learning (ODL)

Major component of formative assessment in distance education includes assessment of students through assignments. According to Trivedi (2010), assignments are used to inspire learners to study contents by searching knowledge from multiple sources and prove that they have studied the course by completing assigned work. Murugan (1998) takes assignments essential to screen the level of attainment of a learner about the course contents. In his views, assignments stimulate learners to study frequently and motivate them to contact to class fellows and teachers for academic support. In addition, Pandey and Parveez (2006) consider assignments helpful for learners to receive advice of their tutors about their learning deficiencies. The assignments also serve an important source of feedback to our distance learner, apart from being an evaluation tool. The feedback helps the learner in identifying the strengths and weaknesses in their understanding of course concepts, which in turn might indicate 'the need for some remedial actions. Another important issue is not getting satisfactory comments from the counsellors evaluators. Feedback in the form of a simple mark or a grade is not very useful to the distance learners (Stone & Armstrong, 1981).

According to Rowntree (1989) feedback from assessment can only be useful when it includes detailed comments. Feedback should inform the learner about what is correct or incorrect, how can a learner improve himself, and the sources of reference material related to the study content. Feedback is also helpful in increasing the motivation of the distance learner. Some researcher argue that feedback generated from continuous assessment is a valuable tool in the learning process enabling learner to assess their own progress and understanding and remedy any error indicated by the assessment (Macdonald et al., 1999; Zakrzewski & Bull, 1999). Another research study also indicates that learners value feedback but comments too general or vague, lacked guidance and focused on the negative or unrelated to assessment criteria are not helpful (Weave, 2006). The importance of timely feedback is well appreciated in many researches (Ashby, 2004; Fozdar et. al, 2006; Higgins et. al, 2002).

The similar studies conducted by Lekamge and Jayathilake (2002) and Jayathilake (1996) locally and Okonkwo (2010), Dambudzo (2012), Hatzipanagos (2008), Tripathi & Fozdar (2007), Kaddam and Elnimeiri (2013) and Onuka & Durowoju (2012) internationally revealed favorable perception on Continuous assessment system and its issues.

Methodology

The present study used the survey research design due to a number of reasons. Survey research is often used to assess thoughts, opinions, and feelings (Shaughnessy J., Zechmeister E. and Jeanne Z. 2011).

Research Design and Sample

Based on the survey research design the study selected sample of students registered in the Diploma in Early Childhood and Primary Education Programme in 2013/14 academic year. The total population of the study was the total number of students registered for DECPE Programme in the particular year in Colombo, Kandy, Matara and Anuradhapura Regional centres in both Sinhala and English Medium. Among the total population target population was selected including only the Colombo (CRC) and Kandy (KRC) regional centres where a large number of students were registered in both Medium. From the target population a sample of 100 students were selected randomly including 80 from CRC and 20 from KRC only in English Medium.

Data Collection Instruments

The study gathered data through three instruments; a questionnaire, interviews and a focus group discussion in order to maintain the validity and reliability of the findings.

Questionnaire

The questionnaire was administered to all students in the sample during a Day school. It included 17 items under 3 parts according to objectives. Scale was used for rating the statements designed for identifying learner perception. Open ended questions were used to identify problems they faced.

Interview

The semi structured interviews were conducted with 20 students. 15 from CRA and 5 from KRC on the same aspects in the questionnaire.

Focus Group Discussion

2 focus groups discussions were conducted during a day school with students who participated in the particular day for about 30 – 60 minutes on the same aspects asked in the questionnaire.

Data Analysis

The quantitative data obtained from the questionnaire was analyzed using SPSS package and reported using charts and tables. The qualitative data which were gathered from interview and focus group discussion were categorized according to the objectives and reported descriptively. The reliability and validity of the findings were maintained by triangulation of the data which were obtained from three different instruments under same aspect.

Discussion

Background Information of the Respondents

The sample included 100 student teachers of DECPE Programme. 84 out of 100 were between 20 -30 years old which indicated that majority were young and in the early adulthood period. Only 12 were above age of 40 and 4 out of total sample didn't respond to the question. The majority of the sample followed the Programme with an aim of obtaining a professional qualification.

With regard to the benefits obtained by the students by following the programme, nearly half of (47) respondents agreed that they were able to gain an understanding about the child. In addition, develop knowledge and skills on different subject areas in preschool curriculum (15), develop the teacher personality (12), develop understanding of different teaching strategies and underline theories of early childhood education (11) were also other benefits obtained by the students. During the interview and focus group discussion it was further identified that students were able to gain benefits specifically understanding the children and creating teaching learning experiences for them based on underlined theories.

Students Perception on ODL

Creed and Robinson (2002) state ODL is a different system in a sense that it provides tutor and learning material to learners at place feasible for them. Distance learners have opportunity to upgrade their educational status without attending the institution regularly (Akhter, 2015). In relation to students' perception on ODL, nearly 50% of students identified the Open and Distance Learning as "self learning, convenient way of learning for working students, free learning, no age limit, learning through computers, online learning and learning at home". When comparing with the literature on the concept of ODL, it could be identified that majority of the sample has a slightly positive

understanding about what is ODL? However, the other half of the sample apparently didn't sure about what is ODL? It was further noticed during the interview that majority didn't answer the question properly. Moreover this could be further identified that only 13 of hundred had followed any programme previously in ODL institution. Hence majority of them didn't have experiences of studying in ODL method.

Before the commencement of the Programme, students were given an orientation on ODL method and the programme. Among the sample, 72 had participated for this orientation programme while others didn't. The students who participated at this orientation programme agreed that, they were given a clear idea about what is ODL? (41), Received relevant instruction regarding the programme (36), obtained assistance to solve their problems (40), gave instruction on writing assignments (36), day-schools (39) and provided all relevant materials (37). During the interview and focus group discussion also students stated that the orientation was very much helpful for them to gain understating of the programme.

Students' Perception of Take Home Assignments (THA)

The following Table 2 shows the students responses regarding THA.

Item	No. of Respondents					
	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree	Didn't respond
Assignments and submission dates are given in advance	35	37	9	4	1	14
Assignments are very complex	9	44	23	7	1	17
Assignments asses only the subject content	3	30	24	27	1	14
Writing take home assignments is boring	4	29	20	21	10	16
Constructive feedback is not given for all assignments	9	34	18	16	1	22
Assignments are consistent with the day schools and content in the modules	9	42	22	6	2	19
Assignments provide room to apply theory into practice	13	43	12	12	00	20
Duration given to submit assignment is not sufficient	12	33	22	11	3	19
There are too many language errors in the assignments	11	35	19	10	07	18
Takes long time to provide feedback	24	34	14	09	1	18

According to the above Table 2 majority agree that THA and assignment submission dates are given in advance (72). More than 50% of the respondents accept that, assignments are consistent with the day schools and contents in the modules (51), enable to apply the theories in to practice (56) but very complex (53) and takes long time to provide feedback (58). Nearly 50% of the respondents also accept that assignments assess only the subject content (39), constructive feedback is not given for all assignments (43), duration to submit assignment is not sufficient (45), there are language errors in the assignments (46), and only 33 accept that writing take home assignments is boring.

Similar findings were revealed from the interview and focus group discussion. Majority agree that assignments were helpful for them to self learn and obtain more knowledge. Some said that since there was more practical work in the assignments it was difficult for them to do the observations asked in some assignments due to finding time while working but they agreed that those assignments were more helpful to understand the reality. Majority said that they are happy with the questions in the assignments, however seriously concern about the delay in sending feedback and they are not happy with the delayed feedback.

It could be revealed that THA used to inspire learners to study contents by searching knowledge from multiple sources and prove that they have studied the course by completing assigned work Trivedi (2010) to certain extent and enable to screen the level of attainment of a learner about the course contents Murugan (1998). Moreover with regard to providing constructive feedback of assignments, however, majority of respondents didn't identify the feedback provided to them as a valuable tool in the learning process, which enable them to assess their own progress and understanding and remedy any error indicated by the assessment (Macdonald et al., 1999 and Zakrzewski & Bull, 1999). Further many researches well appreciate the importance of timely feedback in assignments (Ashby, 2004; Fozdar et. al, 2006 and Higgins et. al, 2002) but it was not identified in the DECPE Programme continuous assessment. These findings were similar to the studies conducted by Tripathi & Fozdar (2007) and Lekamge and Jayathilake (2002).

Students Perception of Activity Based Day school Assignments (ABDA)

The following Table 3 indicates the students' views on ABDA of the DECPE Programme

Item	No. of Respondents					
	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree	Didn't respond
Activity Based Assignments are better than THA	14	28	17	19	7	15
Activity Based Assignments are interesting	15	39	13	10	5	18
Activity Based Assignments foster social interaction and self learning	16	44	16	3	2	18
It is easy earn marks in Activity Based Assignments	9	31	29	9	3	18
Activity Based Assignments improve motivation than THA	14	32	25	10	3	16

As the above Table 3 shows majority agrees have positive views on ABDA than THA. More than half of respondents perceive that ABDA are interesting (54), foster social interaction and self learning (60). Nearly half of respondent also perceive ABDS improve their motivation (46), better than THA (42) and easily earn marks (40). During the interview and focus group discussion also majority of students responded that they like to participate in ABDA since they can engage in learning also as it discuss the sessions at the same time. Therefore they viewed that through ABDA assignments they can earn marks as well as learn the concept through discussion. It revealed that assignments were helpful for learners to receive advice of their tutors about their learning deficiencies (Pandey & Parveez , 2006). Moreover at the focus group discussion it was further revealed that the ABDA were helpful for them to receive constructive feedback on their presentations and ABDASs have the ability to encourage student teachers to read modules and improve their active participation in day schools (Lekamge et al, 2015).

Problems Faced by the Students in Completing the Continuous Assessment Components of DECPE Programme

As revealed in the previous sections delay in receiving feedback for the THA was the major problem that majority of students faced. In addition insufficient time period allocated to submit assignments, too many assignments to be submitted per day, difficulties of answering questions due to its complexity, lack of time to write assignments, language errors in assignments and lack of constructive feedback given in assignments were problems the majority faced particularly in completing THA. Feedback helps the learner in identifying the strengths and weaknesses of their understanding of course concepts, which in turn might indicate ' the need for some remedial actions. Another important issue is not getting satisfactory comments from the counselors, evaluators (Tripathi & Fozdar, 2007). Feedback in the form of a simple mark or a grade is not very useful to the distance learners (Stone & Armstrong, 1981). Hence, majority of respondents were unsatisfied about the process of providing feedback to them. In relation to the ABDAs as Lekamge et al (2015) reported, similar problems were identified such as limited space in the lecture room, insufficient time, inaccessibility of marks obtained and insufficient observations during active participation of students.

Moreover they suggested continuing ABDAs in every course and using multimedia facilities during the assignment. Further they suggested introducing a mechanism to allocate marks for late comers during the ABDAs since those students do not contribute for the discussion but earn marks. As well as taking remedial action as soon as possible to provide timely constructive feedback on the THA.

Conclusion

According to the findings of the study, continuous assessment components play a vital role in the DECPE Programme. Students have strong views about the continuous assessment components particularly the Activity Based Assignments component. Both components are helpful for students' learning and enable their improvement in theory and practice. Yet for further improvements of the learners, the Department has to be dealt with certain issues which have identified in this study. There is a need for the Department to introduce a proper monitoring mechanism to handling the continuous assessment components and providing timely constructive feedback. As recommended by Lekamge et al (2015), the Department should take measures to select a pool of dedicated marking examiners for each subject, introducing innovative and challenging strategies in the training workshops to enhance the enthusiasm, motivation and participation of marking examiners, providing detailed and comprehensive marking schemes, using strategies such as controlled marking and panel marking to reduce variations among marking examiners, encouraging marking examiners to write comprehensive comments on assignments which should correspond with their grades, random checking of assignments, streamlining collecting and sending assignments with the help of centre coordinators and providing clear guidelines on writing assignments to students.

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EXPLORING THE BARRIERS AND REMEDIES FOR THE PROLONGED TIME TAKEN TO COMPLETE THE BACHELOR'S DEGREE PROGRAMMES OFFERED BY THE FACULTY OF ENGINEERING TECHNOLOGY - THE OPEN UNIVERSITY OF SRI LANKA

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Abstract

It has been observed that the students following the Bachelor's degree programmes offered by the Faculty of Engineering Technology, the Open University of Sri Lanka take extraordinarily longer period to complete their degrees. A significant number of students have taken more than ten to fifteen years to complete the four and five year degree programmes. This research was conducted to identify the institutional, student related personal and psychological barriers behind the prolonged duration of completion of the said degrees. A well developed questionnaire was administered among a selected sample of graduates who were awarded with the Bachelor of Technology (Engineering) and Bachelor of Industrial Studies degrees within the past ten years. Results indicate that institutional barriers such as poor academic counseling and guidance, laboratory sessions being inappropriate/not sufficient to understand the course material, inadequate resources and facilities such as library resources, computer and internet facilities, poor teaching and learning environments, lack of laboratory facilities at the regional/study centres have contributed immensely to the lengthy duration taken to complete the degrees. Personal factors such as work related challenges, traveling time and cost of commuting to the main centre located in Colombo, where most of the activities were carried out and inability to spend the required time expected of the programme have played major roles on the prolonged completion of the degree. Results indicate that the cost of tuition is not a major barrier for on-time completion. Psychological barriers such as possessing a limited repertoire of study strategies, lack of understanding of ODL methods and deficiency of constant motivation throughout the study period had a tremendous impact on the delayed graduation. A high satisfaction rate was observed regarding the ODL tools that were used within the programmes and the formative and summative evaluation criteria. More than 90% of the sample approved the five remedies suggested; shortening the duration of the completion of the degree programmes, adopting a semester system, conducting repeat examinations, adopting a methodology to re-correct final examination papers and equip regional centres with all necessary facilities.

Introduction

Faculty of Engineering Technology (FET) of the Open University of Sri Lanka (OUSL) is the only National University that offers engineering programmes via Open and Distance Learning (ODL). The faculty has completed 30 years of existence and produced graduates in the disciplines of Agriculture, Civil, Mechanical, Mechatronics, Computer, Electrical, Electronics and Communication engineering and Industrial studies in Agriculture, Textile Manufacture and Apparel Technology.

The FET being one of the pioneers, among all academic institutions of the world, in the delivery of engineering programmes in distance education mode adopts competitive pedagogical methods and tools for the efficient and effective learning outcome. Keeping par with the technological developments, FET provides students with learner support via modern day technologies such as online support through the 'OUSL Learner Management System', video conferencing by linking the main campus to number of Regional and Study Centres, conducting online examinations etc.

Although FET has taken maximum effort to deliver the programmes in a competitive way, it has been observed that the students following Bachelor's degree programmes offered by the Faculty of Engineering Technology of the Open University of Sri Lanka take extraordinarily longer period to complete their degrees. A significant number of students have taken more than ten to fifteen years to complete the four and five year degree programmes. This research was conducted primarily to identify the institutional, student related personal and psychological barriers behind the prolonged duration of completion of the said degrees. As a secondary goal, remedial measures to shorten the duration have been identified.

Degree Programmes

Bachelor of Technology (Engineering) (BTech) and Bachelor of Industrial Studies (BIS) are the two degree programmes offered by the FET. These degrees are designed in accordance with the requirements of the Sri Lanka Qualification Framework (SLQF) and are recognized both academically as well as professionally. The Bachelor of Technology (Engineering) degree of the OUSL is recognized by the Institution of Engineers Sri Lanka (IESL) as a fulfilling academic qualification for Associate Membership. Further the Bachelor of Technology (Engineering) degree is equivalent to the engineering degrees offered by the other national universities.

Entry Requirement

Three passes in the General Certificate in Education (Advanced Level) in the Physical Science stream is the basic entry requirement for the Bachelor of Technology (Engineering) degree programme. Anyone who possesses three passes in the General Certificate in Education (Advanced Level) in any stream is allowed to join for the Bachelor of Industrial Studies degree programme. Students with higher qualifications in Technology are entered to the programmes in relevant intake points.

The Study System

The central component of the study system by the FET is the printed course material prepared by the relevant academics of the OUSL that offers the student the equivalent to lectures in a conventional university. They also provide a series of carefully designed activities and self-assessment questions, which help the student to develop analytical skills and independent thought. Printed material is supplemented by audio-visual material, online classes, face to face discussions/clarification classes (Day-Schools), tutor clinics, laboratory work, mini projects, fieldwork, field visits, viva-voce examinations and seminars. Laboratory work and fieldwork form an integral part of most courses in technology and are compulsory. By offering FET programmes via the OUSL centre network that is spread all over the island, the barrier of distance is thought to be greatly reduced.

Assessment Criteria

Each course in a Programme of study is assessed separately. Assessment consists of two components, namely, Continuous Assessment (CA) and Final Examination (FE). Continuous assessment is not merely a means of assessment; it is one of the significant means of facilitating learning. Activities such as laboratory work, field classes, tutor marked assignments (TMAs), presentations, mini projects (MP) and continuous assessment tests (CATs) are integral parts of learning and assessment. A student is required to obtain a minimum of 40% marks in continuous assessment of a particular course, to be eligible to sit for the final examination. If this minimum mark is not obtained, the student is considered to have failed in that course and has to re-register in a subsequent year. In this event, the student can obtain only a simple pass (C grade) for the course after successful completion.

A student gaining eligibility in a particular course is expected to sit the final examination in the same year. However, facing the final examination may be postponed to a subsequent year, within the valid period of eligibility of up to a maximum of three (03) academic years including the year the student obtained the eligibility. Final assessment mark of any course depends on the performance at both the continuous assessment and the final examination. For the courses offered by the Faculty, these components carry equal weight. Therefore, students must practice continuous learning throughout the academic year, in order to attain success. Since a fair proportion of the activities used to impart knowledge in distance education have to be carried out by the student, success is possible only if he/she is motivated to learn by himself/herself. A student failing to obtain eligibility to sit the final examination for any course will have to re-register for that course in a subsequent year by re-paying the tuition fee. Such a student will be considered as a repeat student for that particular course. Such students will not be eligible for a grade higher than C grade for the repeat course, depending on the programme.

Counselors at the time of registration strongly recommend that a student only register for the number of courses which they can manage within their respective time availability. A student who obtains the eligibility for a particular course but fails to obtain the minimum pass mark at the final examination will be considered as a re-sit student. Re-sit students are not required to re-register for that particular course; however it is important that such a student sit the final examination before the eligibility period expires. Re-sit students will also not be eligible to obtain a higher grade than a mere pass grade (grade C).

Requirements for the Award of Degrees

Both study programmes in Technology and Industrial Studies consist of four academic levels where the students are expected to enroll for courses from different categories. The course categories included in the Technology curriculum are Engineering, Engineering projects, Mathematics, General, Management, Industrial Training, English Language and Computer Literacy. The Industrial Studies programme consists of courses from categories such as Industrial, Management, General, Mathematics, Projects, English Language, Industrial Training and Computer Literacy. The students are allowed to register for a maximum of 45 credits per academic year which is equivalent to 1,125 Notional Learning Hours. The total course credit requirement for the award of BTech (Engineering) and BIS degrees are 177 and 150 respectively. The credit requirement is subjected to certain conditions so that a pre-determined minimum should be obtained from different categories and levels. In addition, the students need to complete Industrial Training modules equivalent to 30 weeks of duration according to the respective field of specialization.

Methodology

The research design involved extracting a sample of graduates from FET and distribution of a structured questionnaire among them. Exploratory interviews with the easily contactable graduates from FET were conducted before developing the questionnaire.

Exploratory Interviews

The interviews were conducted individually and in groups of two based on the preference of the participants and their time constraints. Seven interviews were conducted with 17 graduates ensuring participation from both BTech and BIS graduates.

The interviews addressed issues related to challenges associated with ODL, barriers arose due to quality of learner support, learners scholarly abilities, required academic skills, time and motivation factors, personal and psychological barriers faced by each individual.

Questionnaire

A structured questionnaire was developed using the data gathered during exploratory interviews and observations made by the first author who has served a period of 13 years as a Senior Lecturer at the FET. The questionnaire included open ended questions, Yes or No questions and questions and statements with five points Likert scale.

The questionnaire assessed the perceptions of the graduates of FET regarding their prolonged duration for the completion of the said degrees on the following points;

1. Institutional barriers

- Poor academic counseling and guidance
- Inappropriateness of course material /Course material being not updated
- Laboratory sessions being inappropriate/ not sufficient to understand course material
- Inadequate resources and facilities such as library resources, computer and internet facilities, poor teaching and learning environments,
- Lack of laboratory facilities at the regional/study centre network
- High standard expected for the final year project
- Timely conveyance of eligibility expired in 3 years
- Timely conveyance of registration information, course offerings, changes to course schedules, examination schedules
- Quality of instruction and effectiveness of Day Schools

2. Student related personal barriers

- Work related challenges
- Travelling time and cost of commuting to main centre of the centre network where most of the activities are carried out
- Inability to spend the required time expected of the programme
- Lack of time due to family commitments
- Cost of tuition fees
- Frustrated with the personal life which led to poor concentration on the programme
- The living (home) environment was not suitable for studies
- Parallel registration with another degree/ diploma programme
- Inability to add/ drop courses during the given period
- Difficulty in familiarizing with the new course delivery system using moodle

3. Psychological barriers

- Possessing a limited repertoire of study strategies
- Lack of understanding of ODL methods
- Deficiency of constant motivation throughout the study period
- Lack of independent learning skills
- Lack of mathematical skills required by the programme
- Knowledge of English was not up to the standard required by the programme

The questionnaire was pilot tested, revised and administered among the selected sample of graduates.

Selecting the Sample Respondents

A sample of 284 respondents was drawn with the use of stratified random sampling method using the full sample frame of 956 graduates graduated during the period from 1986 to 2014 from FET.

Data Collection

The questionnaires were posted/ hand delivered to the selected sample of graduates and 166 responded.

Results and Discussion

The duration for the completion of the degree programmes by the respondents were analyzed and found that more than 90% Of the students have taken more than six to fifteen years to complete the four and five year degree programmes (Figure 1).

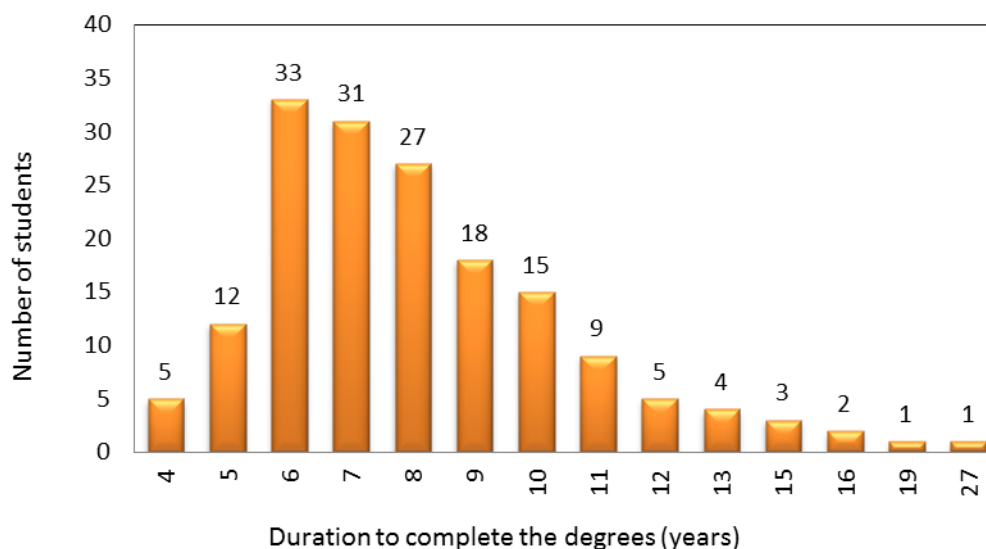


Figure 1

The results are presented in the following sub-sections; institutional barriers, Student related personal barriers and Psychological barriers.

Institutional Barriers

Results illustrated in Figure 2 indicate that 77% of the respondents thought poor academic counseling and guidance have contributed immensely to their prolonged duration to complete the degrees. Most students do not receive proper counseling at the time of registration as most registration activities are carried out by the clerical staff of the OUSL. Selecting unsuitable courses and inappropriate course loads can eventually lead to lengthening the time duration. Of the respondents, 56% were of the view that the laboratory sessions were inappropriate/not sufficient to understand the course material. In most lab sessions the instruction sheets are given at the beginning of the lab session, where the student finds it difficult to understand/ correlate with the course materials. Among the respondents 67% are of the view that inadequate resources and facilities such as library resources, computer and internet facilities, poor teaching and learning environments have contributed much to the lengthy duration of the degree programmes. From the respondents 78% believed that the lack of laboratory facilities at the Regional/Study Centres has contributed greatly to the prolonged duration taken to complete the degrees. Laboratory facilities for higher level courses are available only in the Colombo Regional Centre. Learners from other regions have to travel to Colombo and find accommodation to participate in the laboratory classes, and thus many employed students give-up the lab component of the courses (which is compulsory) as they cannot spend the time needed for the above venture.

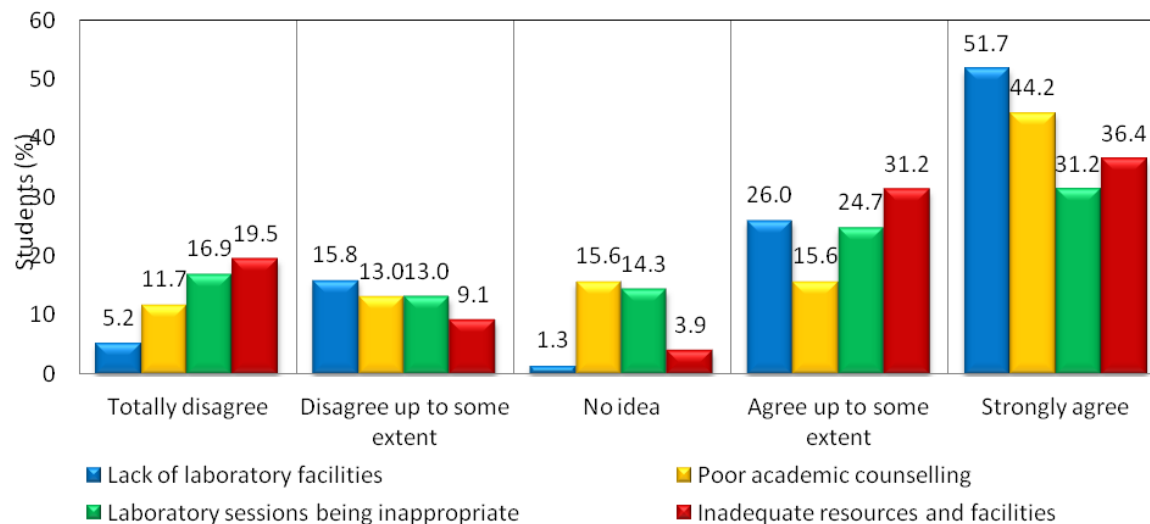


Figure 2

Other factors tested under ‘institutional barriers’ were found to be less important issues for the prolonged completion of the degree programmes.

Student Related Personal Barriers

As illustrated in Figure 3 personal factors such as work related challenges have hindered the on –time completion for more than 60 % of the graduates. The flexibility in the programme structure provides learners to be employed while studying in the OUSL - FET. Therefore most students are found to be employed at the time of graduation. Employed students find it difficult to obtain leave for some of the compulsory activities and find it hard concentrate fully on the programme due to the duties vested on them. Work related challenges are more on students working in the private sector than government institutions. It is apparent from Figure 3 that 64% of the respondents considered the traveling time and cost of commuting to the main centre located in Colombo has contributed hugely to the prolonged duration for the completion of the degree programme. This factor plays a major role for the students living away from the main centre. For an example, a student living in Kandy who wishes attend a Day School of duration 2 hours, should spend at least 8 hours of travel time to Colombo and back home in Kandy. Therefore, most students from regions other than Colombo do not attend the face to face sessions conducted by the OUSL teachers. Of the respondents 57% have reported that their inability to spend the required time expected of the programme have lengthened the duration of the programme whereas 40% of the respondents rated against it. Mainly employed students failed to allocate the time required to follow the course effectively. On the other hand, unemployed young students with successful secondary education are able to spend plenty of time on the degree programmes for on time completion. For 63% of the respondents the cost of tuition is not a major barrier for on-time completion.

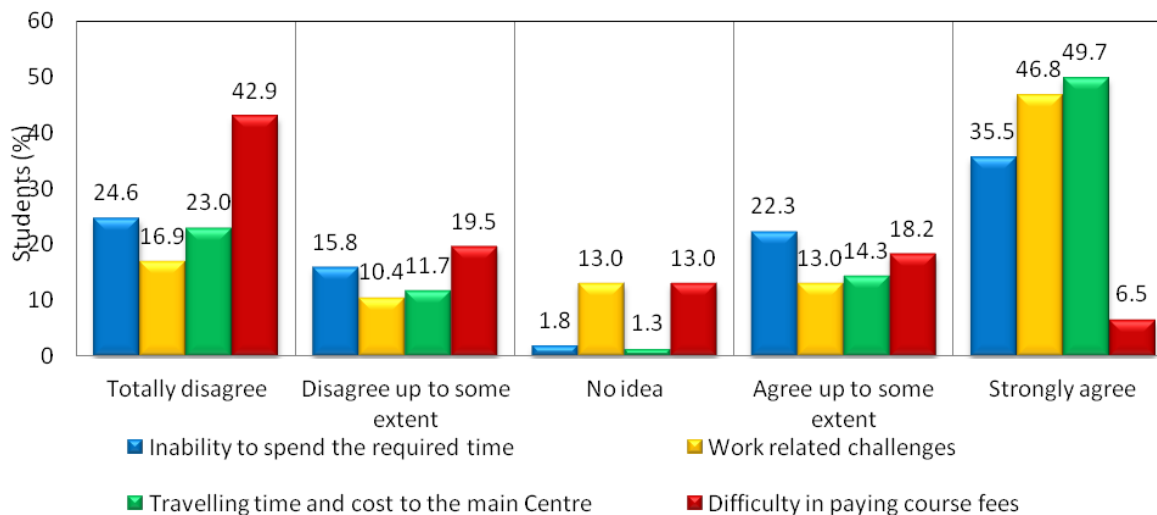


Figure 3

Other personal factors such as family commitments, frustration which led to poor concentration on the programme, the living (home) environment not suitable for studies, parallel registration with another degree/ diploma programme, inability to add/ drop courses during the given period, difficulty in familiarizing with the new course delivery system using moodle etc were ranked as less important issues when it came to on time completion of the degree programmes.

Psychological Barriers

According to Figure 4, 58% agreed that possessing a limited repertoire of study strategies have lengthened their degree programme. Most of the learners use primitive strategies to help them to remember course material, not to understand them. Most of them use crash lessons called ‘kuppi’ classes conducted by one of the peers just before the examinations to remember the important course content. About 86% of the learners agreed that lack of understanding of ODL methods have contributed immensely to the increased time duration for their degree programmes. The learners do not understand the difference between a conventional lecture and a Day School. Most of the learners turn up for Day Schools with minimal preparation which reflects a lack of understanding of ODL objectives rather than lack of effort. The learners overall attitude towards ODL was poor as they always compare it with conventional system of course delivery. Most learners do not understand that the main medium of bridging the gap between the teacher and the student is the printed course materials. Among the learners 66% were of the idea that the deficiency of constant motivation throughout the study period had a tremendous impact on the delayed graduation. Degree programmes offered by FET need more learner commitment and self motivation, as the learner is not always in an academic environment compared to conventional universities.

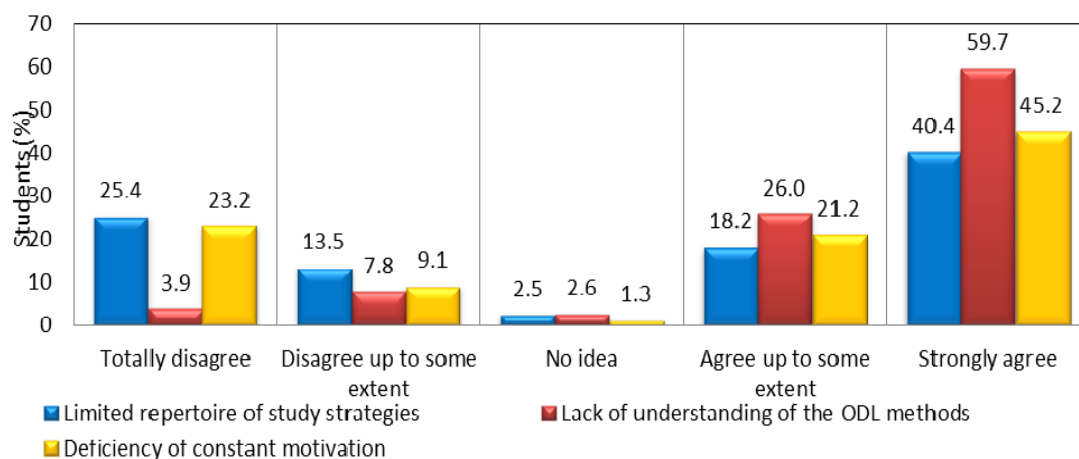


Figure 4

Other Psychological barriers such as lack of independent learning skills, lack of mathematical skills required by the programme and knowledge of English not up to the standard required by the programme had less impact on the prolonged duration taken to complete the degrees. Although the inadequate knowledge in English and Mathematical skills should have been a strong factor for the lengthy time duration to complete the degrees, majority of respondents considered them as less important issues.

Tools Used in Delivering the Degree Programmes

Nearly 80% high satisfaction rate was observed regarding the ODL tools that were used within the programmes and the formative and summative evaluation criteria which are shown in Figure 5.

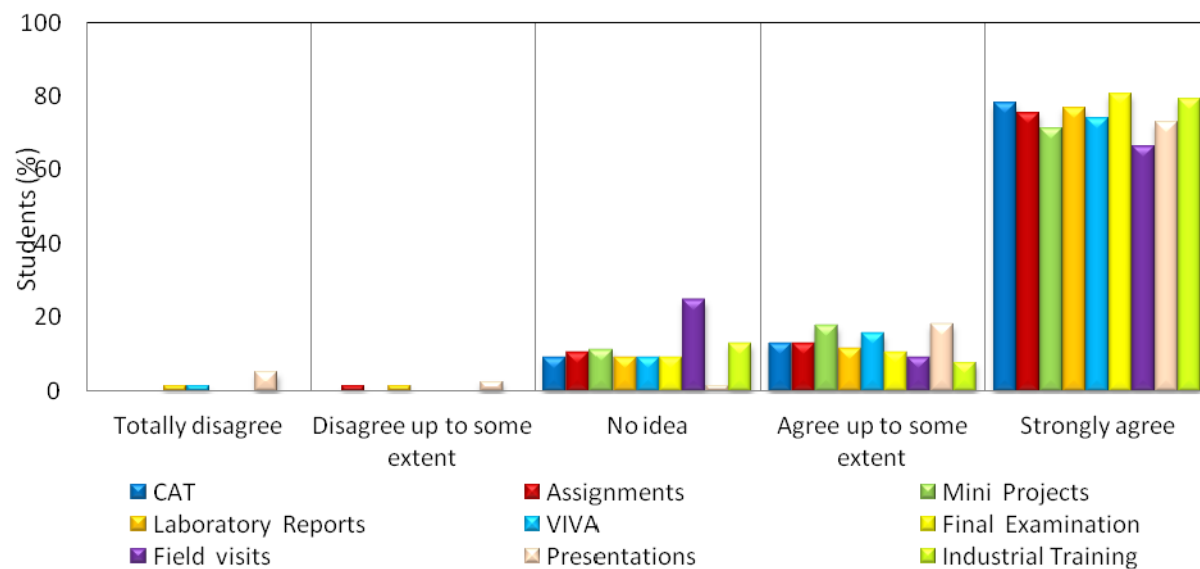


Figure 5

Remedies

More than 80% of the sample approved the five remedies suggested; shortening the duration of the completion of the degree programmes, adopting a semester system, conducting repeat examinations, adopting a methodology to re-correct final examination papers and equip Regional Centres with all necessary facilities.

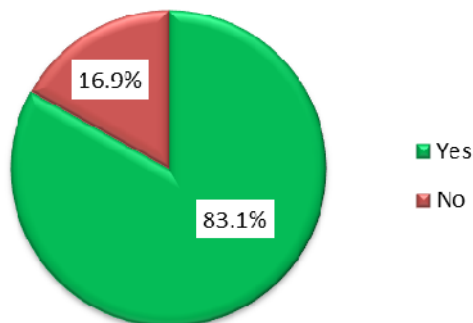


Figure 6: Adopting a semester system

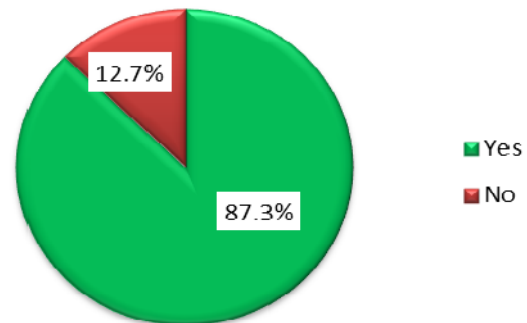


Figure 7: Conducting repeat examinations

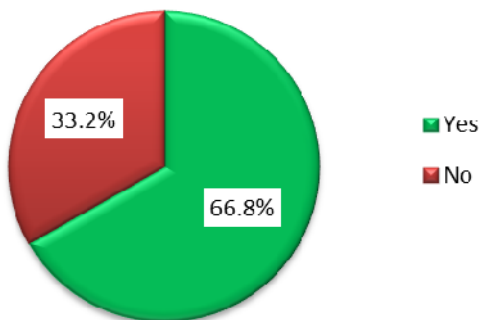


Figure 8: Re-correction of final examination papers

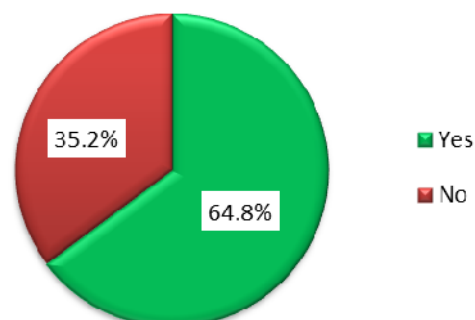


Figure 9: Equip regional centres with necessary facilities

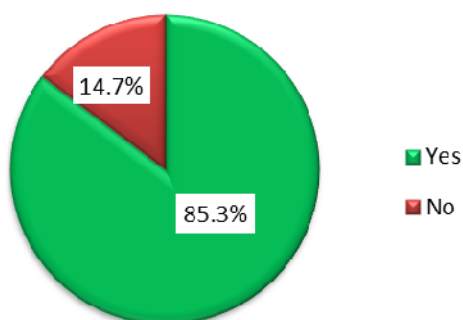


Figure 10: Shortening the duration of the degree programmes

Conclusions and Recommendations

Findings of this study provide some insight for shortening the duration of the BTech and BIS degree programmes offered by the OUSL. Institutional barriers such as poor academic counseling and guidance, laboratory sessions being inappropriate/not sufficient to understand the course material, inadequate resources and facilities such as library resources, computer and internet facilities, poor teaching and learning environments, lack of laboratory facilities at the regional/study centres have contributed immensely to the lengthy duration taken to complete the degrees. But the institutional barriers can be easily overcome by strengthening the Centre network that will enhance learner support

and updating and upgrading laboratory facilities. Counseling at the time of registration for each academic year should be carried out by the teachers of FET and proper guidance should be given in selecting appropriate course loads. Personal factors such as work related challenges, traveling time and cost of commuting to the main centre located in Colombo and inability to spend the required time expected of the programme have played major roles on the prolonged completion of the degree. Results indicate that the cost of tuition is not a major barrier for on-time completion. Psychological barriers such as possessing a limited repertoire of study strategies, lack of understanding of ODL methods and deficiency of constant motivation throughout the study period had a tremendous impact on the delayed graduation. Personal barriers can be alleviated by molding the learners to be good time managers and independent learners with strong focus. Providing the learner with a greater repertoire of study strategies may remove physiological barriers. All these can be achieved via 'Student Orientations' which should be conducted with a strong bias on time management, developing academic skills and ODL methods. The remedies suggested for external means of shortening the duration of the degree programmes were well accepted by the respondents.

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TEACHERS' PERCEPTIONS ON PROFESSIONAL DEVELOPMENT PRACTICES: A STUDY ON GRADUATE TEACHERS FOLLOWING POST GRADUATE DIPLOMA IN EDUCATION PROGRAMME

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Abstract

The study explores Graduate teachers' perceptions on Post Graduate Diploma in Education (PGDE) programme conducted by Open University of Sri Lanka (OUSL) with the objectives to study their perceptions and factors affecting their perceptions. Target population of the study consisted graduate teachers following PGDE at OUSL. A sample of one hundred and fifty six graduate teachers following PGDE at Jaffna Regional centre (JRC) of the OUSL in 2014/2015 academic year was purposively selected for this study. A self developed questionnaire, built up by reviewing related literature was used for data collection. Focus group interview was also used to elicit further responses from teachers. Quantitative data collected through questionnaire survey was analyzed using Mean and Standard Deviation (SD). ANOVA was used to study the factors affecting teachers' perceptions. Data gathered from focus group interview was analyzed qualitatively. Findings from the study revealed that, graduate teachers strongly agreed or agreed that most of their professional development needs were satisfied by the PGDE programme. They strongly agreed that professional needs under the "classroom management and student discipline" domain were satisfied by the programme (Overall Mean=3.64). They also perceived "preparation for teaching in multi cultural setting" was the least satisfied professional development need (Mean=3.14). Further, the results of this study indicated that teachers' perceptions on their professional development practices were affected by their gender, age, and their first degree. Based on the findings, the study concluded that, teachers had positive views on PGDE programme conducted by OUSL. However, they also perceived that, some professional development needs were least satisfied by the programme. It is therefore recommended the PGDE programme conducted by OUSL should be further improved in order to address graduate teachers' professional development needs.

Key terms: Professional development, Graduate teachers, Perception

Introduction

The quality of teaching depends on the quality of teachers. This, in turn, depends to some extent on the quality of their professional development. Professional development (PD) programmes enable teachers to become highly qualified by improving, increasing and advancing their knowledge through a better understanding of effective instructional strategies.

In the Sri Lankan context, Post Graduate Diploma in Education (PGDE) is the basic professional qualification for graduate teachers. Existing Post Graduate Diploma in Education programmes conducted by various institutions emphasize the provision of required pedagogical skills, instructional technologies and practical experience for teachers. Faculty of Education of the Open University of Sri Lanka (OUSL) offers PGDE of 15 months duration in open & distance mode with the aim of improving the professional competencies of Graduate teachers in the school system.

Teachers' beliefs, perceptions and attitudes towards professional development initiatives have a powerful impact on the effectiveness of those programmes after implementation. (Hatting, A. De Kock, D.M., 2008). Therefore, strong consideration should be given to teachers' perception on professional development practices to enhance their quality. There is a pressing need for empirical evidence about the professional development programmes that teachers participate in, and the

relationship between these programmes and enhancement of professional knowledge and skills. However research studies on teachers' perceptions regarding their professional development practices are practically nil in SriLankan context. The present study is designed to address this need by investigating graduate teachers' perceptions on professional development programme conducted by the Open University of Sri Lanka.

Objectives of the Study

This research study analyses and outlines the perceptions of teachers on their professional development. To guide the research, the specific research objectives are as follows.

1. To study the perceptions of teachers in relation to their professional development practices.
2. To identify the factors that affect teachers' perception on their professional development practices.

Research Questions

In this study the central research question is what are teachers' perceptions on professional development practices? that is accompanied by the following sub questions to guide the study.

1. What are teachers' perceptions on their professional development practices?
2. Are there any significant relationship between teachers' perception on their PD practices and teachers?
 - Gender
 - Age
 - Length of teaching experience
 - First degree?

Significance of the Study

The purpose of the study was to examine graduate teachers' perceptions on their professional development practices. Teachers' PD plays a key role in bringing about changes within the school system. If one professional development programme is implemented successfully and viewed as valuable by those who receive the training, then it will really affect their class room teaching. If teachers perceived positively and recognize the importance of the PD programme, then the experiences gained by the teachers will positively bear impact on their teaching learning process. Teachers' perceptions and beliefs regarding their professional development were put to constructive use to examine the effectiveness of the current practices Therefore the significance of the study is just as pertinent and even represents a critical feed back on current professional development practices.

Literature Review

This part provides an in-depth analysis of related literature to get conceptual clarity over the terms used in this study.

Professional development refers to many types of educational experiences related to an individual's work. Day (1999) gives a more useful definition about PD, stating that, PD consists of all natural learning experiences and those conscious and planned activities which are intended to be of direct or indirect benefit to the individual, group or school and which contribute to the quality of education in the classroom. Day's definition is more holistic in the way that PD covers all kinds of learning experiences both planned and unplanned, from individual level to institutional level to achieve the core aim of education.

Kassa & Amdemeskel (2013) made a study on "Practices and challenges of Post Graduate Diploma in Teaching Programme" (PGDT) of Haramaya University, Eastern Ethiopia. This study found that the practice of PGDT was not appropriate and was against the guidelines. Findings of this study emphasize that the PD programmes should be relevant and designed according to the guidelines.

Exploring teachers' beliefs, perceptions and attitudes towards PD will give clear insight into the problems that can arise where a PD programme is implemented. Friedman (2011) found the concept teachers' perceptions as teachers' views, attitudes and beliefs regarding PD initiatives and their impact on teacher practice. In the light of these ideas perceptions can be considered as teachers' understandings or awareness of a professional learning situation. In the present study perceptions are considered as the views, opinions, beliefs and attitudes held by teachers regarding PD practices.

Lingam (2012) conducted a study to determine how a cohort of training teachers perceived the training programme they completed at Vanuatu institute of teacher education. The results revealed that the beginning teachers were generally positive about their training programme. However some areas such as multi class teaching, school practicum, school administration, duration of the training programme and programme upgrading, learning environment, staff responsibility and research were identified by these teachers that they considered need improvement.

These studies showed that exploring teachers' perception will give an opportunity to get feedback on their PD practices and help to improve the current practices. By reviewing these studies the researcher understands the importance of exploring teachers' perceptions on their PD practices in Sri Lankan context and the present study is designed accordingly. Therefore through the present study the researcher tries to explore teachers' perceptions on the PGDE programme conducted by OUSL.

Methodology

This study used a survey research design, which came out of both quantitative and qualitative data collection framework. Survey research designs are procedures in which investigators administer a survey to a sample or to the entire population of people to describe the attitudes, opinions, behaviours or characteristics of the population (Creswell, 2012). As the present study aims to investigate teachers' perceptions on their PD practices survey research design was chosen for this study.

Research Design and Sample

This study involved the population of Graduate teachers Sri Lanka. The target population was Graduate teachers in Jaffna district. The sampling technique used in this study was purposive sampling technique. All the Graduate teachers who followed PGDE at Jaffna Regional Centre (JRC) of the Open University of Sri Lanka (OUSL) in 2014/2015 academic year were purposively selected for this study. One hundred and fifty five graduate teachers registered for PGDE at JRC of OUSL were taken as sample for this study.

Researcher designed survey questionnaire was used to study teachers' perceptions on their PD practices. Based on the results of questionnaire survey two focus group interviews were also conducted to further explore teachers' perceptions.

For the design of the questionnaire survey, the language used in the survey instrument was Tamil, as Tamil is the mother tongue of the teachers in this study. It contains two parts which are, Part A-Demographic information and Part B-Perceptions on Professional development practices. For teachers' perceptions on their professional development practices, teachers were asked to indicate the extent to which the PD programme they participated satisfied their PD needs and preferences, on a Likert scale ranging from 4 representing "strongly agree", 3 representing "agree", 2 representing "disagree" and 1 representing "strongly disagree". The reliability of the questionnaire was assessed. Cronbach's alpha was used to determine the reliability of the instrument. The reliability of the survey was tested as high as average of 0.939. Which is very highly reliable strong value of Cronbach's alpha.

Two focus group interviews were conducted with OUSL student teachers and ten graduate teachers following PGDE at OUSL were invited for each focus groups. The focus group interview helped to broaden and enrich a deeper understanding of the information gathered through the questionnaire survey. Focus group interviews were conducted in Tamil. Responses for the interview were recorded and transcribed.

Data Analysis

For the quantitative data of the questionnaire survey, data analysis was conducted with the use of a computer programme SPSS (Statistical Package for Social Sciences). The data were analyzed using statistical mean (\bar{x}) and standard deviation (SD). Mean and standard deviation employed to determine the patterning views of teachers on their PD needs as well as their perceptions on PD practices. ANOVA test was used to examine if there is any relationship between demographic characteristics and teachers' perceptions on professional development practices.

Data gathered from the focus group interview were analyzed by clarifying the information into categories, themes and dimensions. The qualitative analysis of the focus group interview included coding the raw data, repeated listening to the interview audio tapes and reviewing the copies of the transcribed interviews by reading and re-reading.

Table I: Demographic Characteristics of the Survey Respondents

Main Characteristics	Sub Group	Institution				Total	
		UJA		OUSL			
		N	%	N	%	N	%
Gender	Male	22	39	47	43	69	41
	Female	35	61	63	57	98	59
Age	20-25	0	0	1	1	1	1
	26-30	0	0	42	38	42	25
	31-35	23	40	44	40	67	40
	36-40	21	37	16	15	37	22
	41-45	10	18	6	5	16	10
	above 45	3	5	1	1	4	2
Experience	1-2	1	2	57	52	58	35
	3-5	3	5	21	19	24	14
	6-10	41	72	28	25	69	41
	11-15	8	14	1	1	9	5
	Above 15	4	7	3	3	7	4
Degree	Arts	38	67	46	42	84	50
	Science	8	14	38	35	46	28
	Commerce	8	14	4	4	12	7
	Fine Arts	3	5	13	12	16	10
	Agriculture	0	0	1	1	1	1
	ICT	0	0	8	7	8	5

To create the whole framework for analyzing teachers' perceptions of their PD programme, Mean (\bar{X}) values for each item were calculated.

Table II: Overall Mean Scores of Professional Development Domains of Teachers' Perceived Satisfaction of Items by Institution

	TEACHERS' PERCEPTION ON PROFESSIONAL DEVELOPMENT PRACTICES		
	Items	OUSL	
		Mean	SD
	Domain 1: Subject content & Theoretical aspects	3.42	.313
1.1	Needs to obtain basic knowledge on Educational psychology	3.59	.494
1.2	Needs to obtain knowledge on sociological & philosophical foundations of Education	3.40	.511
1.3	Needs to develop knowledge on Educational practices of other countries	3.33	.580
1.4	Needs on Updating & sharing of pedagogical content knowledge	3.38	.635
1.5	Needs to obtain knowledge on inclusive education	3.15	.522
1.6	Needs to obtain theoretical knowledge on teaching learning process	3.56	.517
1.7	Needs on awareness and knowledge of policies related to Education	3.47	.537
	Domain 2: Planning and implementation of Teaching & Learning	3.52	.305
2.1	Needs on curriculum design, implementation & improvement	3.53	.555
2.2	Needs on developing my skills in planning lesson	3.68	.468
2.3	Needs on knowledge and application of teaching strategies and skills	3.59	.531
2.4	Needs on knowledge and skills to motivate student learning through different teaching methods	3.51	.538
2.5	Needs on knowledge and application of student centered teaching learning methods	3.50	.538
2.6	Needs on developing knowledge and skills of practice teaching through participating in model teaching	3.55	.500
2.7	Needs on sharing and exchange of subject teaching practice	3.56	.534
2.8	Needs on developing skills of integrating ICT into teaching.	3.35	.582
2.9	Needs on improving skills to produce and utilize teaching aids	3.41	.547
	Domain 3: Student and Learning	3.38	.506
3.1	Needs on knowledge and skills to motivate student learning by using audio visual aids.	3.32	.692
3.2	Needs on developing abilities to engage students actively in learning	3.45	.517
	Domain 4: Organizing learning context	3.23	.469
4.1	Needs on skills to create a safe, orderly and supportive learning environment	3.46	.570
4.2	Needs on skills for teaching in a multi-cultural setting	3.14	.616
4.3	Needs on preparation for multi- class teaching	3.10	.626
	Domain 5: Assessment and reporting	3.41	.480
5.1	Needs on knowledge and skills on student assessment methods and procedures	3.46	.536
5.2	Needs on skills to use student assessment results	3.35	.552

	Domain 6: Class room management and Student discipline	3.63	.394
6.1	Needs on developing classroom management skills	3.65	.497
6.2	Needs on skills to maintain student discipline and behavior	3.62	.541
6.3	Needs on knowledge and skills for student counseling	3.63	.503
	Domain 7: Student Development Domain	3.36	.361
7.1	Needs on understanding students diverse needs	3.28	.508
7.2	Needs on Identifying and supporting students' diverse needs	3.33	.528
7.3	Needs on adopting teaching practices according to the needs of each student	3.37	.503
7.4	Needs on improving skills to teach children with disabilities and special education needs	3.13	.695
7.5	Needs on facilitating whole person development of student	3.38	.524
7.6	Needs on building trust and rapport with students	3.64	.502
	Domain 8: School Development Domain	3.36	.884
8.1	Needs on cultivation of caring and inviting school climate	3.38	.543
8.2	Needs on understanding students' family background	3.42	.567
8.3	Needs on knowledge and skills to involve families and other stakeholders appropriately	3.18	.566
8.4	Needs on building trust with parents for further school development	3.56	.934
8.5	Needs on awareness and knowledge of societal changes in relation to their impact on school	3.28	.599
	Domain 9: Creating and maintaining Professional and social relationships	3.52	.459
9.1	Needs on establishing working relationships with groups	3.53	.501
9.2	Needs on sharing of knowledge and good practices with others	3.50	.539
	Domain 10: Professional responsibilities	3.39	.385
10.1	Needs on skills to experiment with and reflect on my practice in a supportive setting	3.35	.516
10.2	Needs on developing skills to engage in researches to improve my professional practices	3.33	.511
10.3	Needs on developing self-learning abilities	3.46	.538
10.4	Needs on school management and administration	3.40	.530

To investigate the relationships between teachers' demographic characteristics namely gender, age, length of experience, first degree and their perceptions on PD practices, ANOVA test was used. This is further illustrated in detail as follows:

Table III: ANOVA on Overall Mean Scores of Perceptions on Professional Development Practices

Demographic Variable	PD domain		Sum of Squares	df	Mean Square	F	Sig.
Age	Class room management and Student discipline	Between Groups	2.424	5	.485	3.223	.008
		Within Groups	24.218	161	.150		
		Total	26.642	166			
	Student Development Domain	Between Groups	1.960	5	.392	2.625	.026
		Within Groups	24.041	161	.149		
		Total	26.001	166			
First degree	Student and Learning	Between Groups	3.634	5	.727	3.065	.011
		Within Groups	38.181	161	.237		
		Total	41.814	166			
	School Development Domain	Between Groups	8.161	5	1.632	2.979	.013
		Within Groups	88.218	161	.548		
		Total	96.379	166			
Gender	Assessment and reporting	Between Groups	.961	1	.961	3.948	.049
		Within Groups	40.144	165	.243		
		Total	41.105	166			

Discussion

From the analysis of teachers' responses to the questionnaire survey the following results were obtained.

Teachers strongly agreed that their professional development needs under the “classroom management and student discipline” domain were satisfied by their PD programmes. (Mean = 3.64, SD = 0.394) Teachers consistently agreed that their PD needs on class room management and student discipline were satisfied to a great extent by the PD programme they followed. One teacher said,

“This programme prepared us to get the contributions of principal, colleagues and students for classroom management”. (Teacher P, female, OUSL, Focus group interview, 18th July 2015.)

Student teachers from OUSL perceived “developing skills in lesson planning” as the highly satisfied PD aspect out of the 43 needs categorized under ten domains (Mean = 3.68, SD = 0.468). They viewed that the PD programme has strengthen their knowledge and skills in lesson planning. It motivated their personalities and made them feel secure in the classroom. One teacher expressed her satisfaction as follows.

“I feel now I can prepare lessons successfully. As I could plan and prepare my lessons appropriately, I am able to use effective teaching methods, teaching aids and assessment methods. I am confident about my teaching.” (Teacher R, female, OUSL, Focus group interview, 19th July 2015.)

Participants in this study perceived that some of their PD needs were inadequately met by their PD programme. Respondents were least agreeable with “organizing learning context” domain. Teachers expressed that this domain was least satisfied by their PD programme (Overall mean = 3.23, SD = 0.469). Further, Item 4.3 “preparation for multi class teaching” under this domain was perceived as the least satisfied PD need among the 43 items by the teachers from OUSL. (Mean = 3.10, SD = 0.626).

One teacher expressed his disappointment regarding the satisfaction of this need and said,

“As we are living in a globalized society we need knowledge and skills to organize learning environment suitable for diverse students. However we had limited opportunities to get this knowledge through our PD programme”. (Teacher O, male, OUSL, Focus group interview, 18th July 2015.)

All the student teachers strongly agreed or agreed that most of their PD needs were satisfied by the PD programme they followed. However student teachers from OUSL perceived the PD needs including “knowledge on inclusive education”, “skills for teaching in multi-cultural setting”, “understanding students’ diverse needs”, “improving skills to teach children with disabilities and special education needs” and “knowledge and skills to involve families and other stakeholders” were least satisfied by their PD programme.

For the research question regarding the relationship between teachers’ perceptions and their demographic characteristics, significant differences were observed between age and their perceptions on PD practices. Elder teachers perceived their PD practices more positively than younger teachers. Significant difference was observed between young and elder teachers’ perceptions on “classroom management and student discipline” domain. (p value = $0.008 < 0.05$). Significant difference was found in teachers’ perception on “Student Development Domain” also. (p value = $0.026 < 0.05$).

Significant differences were observed between gender and teachers’ perceptions on PD practices. Comparing to males, female teachers had more positive views on their PD practices. Significant difference was observed in the perceptions of male and female teachers on “assessment and reporting” domain. ($p = 0.049 < 0.05$). Female teachers have more positive attitude towards “assessment and reporting” domain (mean = 3.44) than male teachers (mean = 3.29). However, no significant difference was revealed in the relationship between teachers’ gender and their perception on other nine PD domains.

There were significant differences between teachers’ perceptions on their PD practices and their first degree. ICT (Information Communication Technology) graduates had more positive views on their PD practices. Teachers’ perception on “students and learning” domain significantly differed between their first degrees. (p value = $0.011 < 0.05$). ICT graduates had more positive attitudes towards “student and learning” domain than others (Mean = 3.81, SD = 0.372). No significant difference was revealed in the relationship between teachers’ perceptions on other nine PD domains and their first degrees.

No significant differences were observed between teachers’ perceptions on their PD practices and the length of their teaching experience.

Conclusion and Recommendations

This study explored the graduate teachers' perceptions on their PD practices. Most of them had positive views on their PD practices; hence they found some needs were not satisfied by their PD programme. Further, their perceptions on PD practices were significantly affected by their age, gender and their first degree. As teachers are the most valuable human resources in the Sri Lankan Education system, effective professional development programmes should be planned and provided to improve their quality. The following recommendations were made based on the findings of the study.

Teachers' professional development programmes should address and prioritize teachers' professional needs. There should be a systematic identification of teachers' PD needs. Hence, it is quite important to take into account the teachers' perceptions on professional development practices.

The university might consider a review of their curriculum. They need to revisit their teacher education programme frequently in the hope of providing better preparation for teachers.

Teachers' PD programmes should develop teacher competencies in internationalism and multiculturalism.

Teacher education institutions should include people at various levels in their planning for PD programmes. Further, effective alumni associations should be established to bring old students and institution together to discuss and plan programmes and curriculum.

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A STUDY ON THE PERCEPTION OF STUDENT TEACHERS TOWARDS USE OF OPEN AND DISTANCE LEARNING MODE: A CASE OF OUSL

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Abstract

Distance education has become very popular in delivering course content among higher educational institutes in Sri Lanka. The Open University of Sri Lanka (OUSL) is one of the pioneer institutes which offeres its courses via Open and Distance learning mode in the Sri Lankan higher education sector. The Post Graduate Diploma in Education Programme, offered by the faculty of Education of the OUSL, is one of the most demanding programmes in the field of education. This programme focuses on enhancing professional training among schools teachers via Open and Distance learning. This study examines the Perception of Student Teachers towards Use of Open and Distance learning in the Teaching Learning process. The descriptive survey method was employed as the research design. The selected sample consisted of 125 students in the selected centres. Questionnaires and focus group discussions were used in order to gather data. Simple statistical methods were used in analyzing quantitative data. Qualitative data were analyzed using the descriptive method. The study revealed that convenience in ODL method has motivated students in selecting distance learning. As the majority of the students have graduated from the conventional system they have faced difficulty in adapting to the system at the beginning of the programme. As they are working, many of them have faced problems with time management, but those who are familiar with the Open and distance learning system were quiet capable of to adjusting to the system very soon. Those who were familiar with the ODL were enthusiastic about self learning and they rejected conventional lecturer method in the learning process. Though the students were provided with learner support services in line with technology, a majority of the students were reluctant to use the provided learner support services professionally due to their inability as well as lack of self motivation. Those who were aware of the system as well as the technology benefited from the services provided. Compared to rural teachers, urban school teachers were motivated to use technology in the ODL system. Students have faced personal, professional and technological problems while they followed the programme in the distance mode and they were capable of managing them accordingly. Almost all students were satisfied with the process followed in offering the course as they were able to complete the programme in a progressive manner compared to other conventional organizations.

Key words: Perception, open and distance learning

Introduction

Article 26 of the conservation on Human Rights in 1947 states, that Education is a fundamental human right. Education plays a vital role in our societies. Robinson & Latchem (2003) states that “Societies expect great deal from their education systems. National Governments and international organizations set new goals...”. In order to fulfill the expectations of society with quality education, its school education system should take the lead. Teachers in schools needed to be skillful to achieve the designed goals in education. If not it will be hard to achieve the designed educational goals and objectives accordingly.

The quality of the education system lies in the hands of the teachers in the system. Therefore, teacher education plays a vital role in improving effectiveness and efficiency of the education system. Teachers are the change agents in our society. Due to that it is very important to provide teacher training accordingly. Most countries with high population make use of distance education for teacher training “Distance education for teacher education and training is widely used around the world, in both small and large countries and in a variety of contexts” Robinson & Latchem (2003:29).

Open and distance education for teacher education and training is not a new concept. It has been in practice since 1960 to solve the higher education problems in different contexts. Open learning refers as “a philosophy of learning that is based on the principle of flexibility to increase access to and equity in education. ... In this context, learners are allowed to determine what they want to learn, how they want to learn, when and where they want to learn, how to get their learning assessed and what to do next in terms of career direction” (2002:14). Distance education is explained as “a methodology, which the learner is separated from the instructional base or teacher, either in space or time, for a significant portion of their learning (2002:14). Open and distance learning is combination of both terms. UNESCO (2002) defines the term ODL as “ term open and distance learning reflects both the fact that all or most of the teaching is conducted by someone removed in time and space from the learner, and that the mission aims to include greater dimensions of openness and flexibility, whether in terms of access, curriculum or other elements of structure”.

Most distance education programmes are offered as adult education programmes. Teacher education is one of the most popular areas where the ODL mode is used to offering its teacher training programmes. Many researchers conducted in different contexts on teacher education have shown the importance of the ODL mode. Today every country needs better teachers than more teachers. Unesco (2015) further states “Teachers are vital. Unless we can get more teachers, and better teachers, we will not reach the target of making quality education available for all by 2015. But there are still world shortages of teachers, still there are large numbers of under qualified teachers, and still many who need further professional education and training as they work.” In order to overcome the existing problem in teacher training, open and distance education could be implemented to fill the gap.

When offering programmes for teacher education, there is need to identify the teachers perception towards the programme. Perception could be identified as interpretation of sensory information. Woolfolk defines perception as “the process of detecting a stimulus and assigning meaning to it is called perception” (2001:245). This study examines the teachers’ perception towards offering teacher education programmes using the ODL mode.

Background to the Study

The Open University of Sri Lanka (OUSL) was established in 1980 by the Government of Sri Lanka under the Universities Act No. 16 of 1978. The establishment of the OUSL is significant in the higher education system in Sri Lanka because it paves the way for those who were unable to enter a conventional university to continue with their higher education. The OUSL, offers its courses via open and distance mode. At the beginning, very few courses were offered considering the demand and the capacity available. The Post Graduate Diploma in Education Programme (PGDE) was one of the initial programmes offered by the OUSL. Currently, this programme is offered in all three media (Sinhala, Tamil & English) in 25 Regional and Study centres extended island wide. Currently, this course has been offered by the Department of Secondary & Tertiary Education of the Faculty of Education. Over the years, this programme has been improved with many qualitative and novel changes. The academic staff is highly concerned about the quality of delivery and quality of the graduate teachers who will be awarded the PGDE. Due to this numerous steps are being followed to ensure the quality of the teaching – learning process in the programme and to create a positive learning environment for student teachers. Figure 1.1 exhibits how the programme is being offered from the beginning to end.

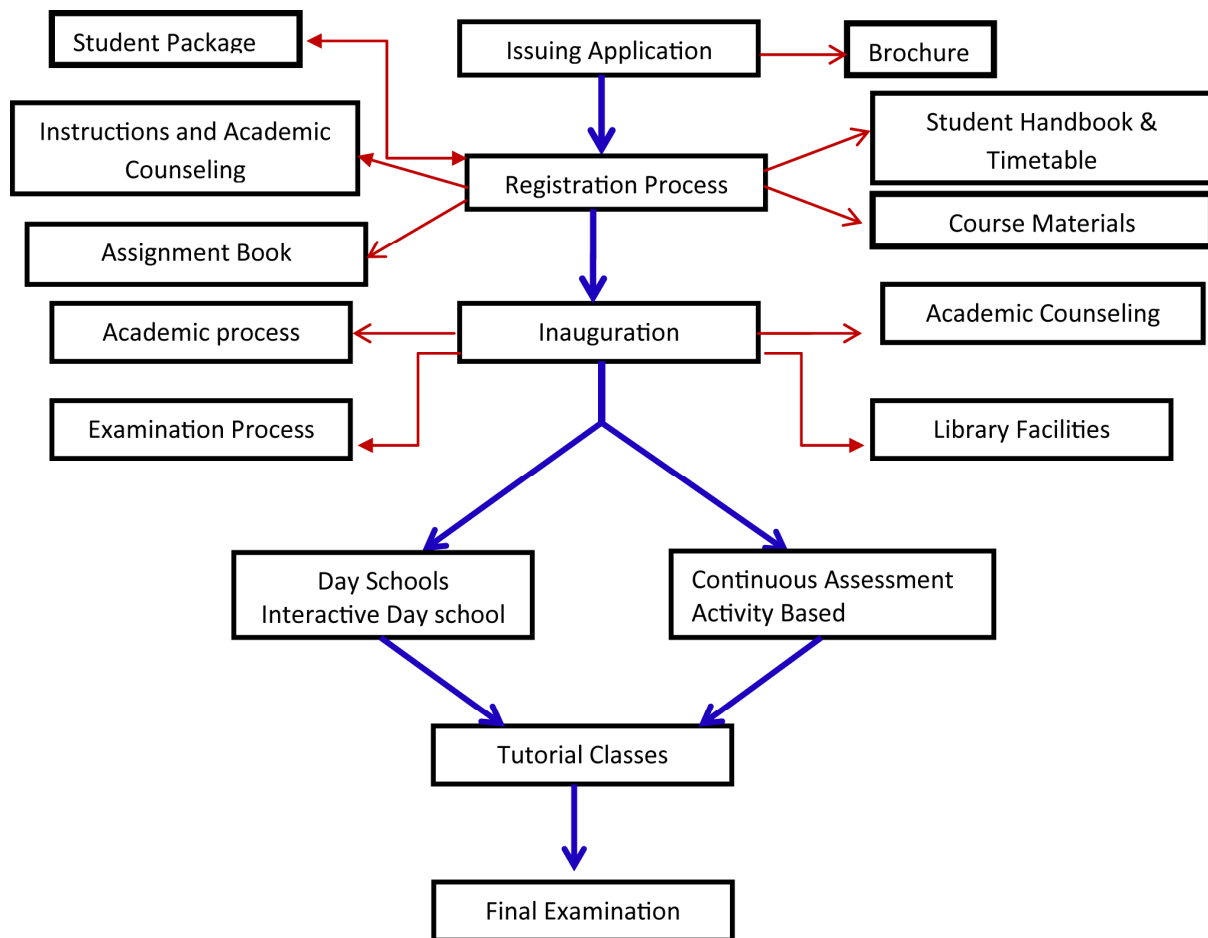


Figure 1.1: Procedure

Offering a programme via the ODL mode is rather different from the conventional face to face system. It is very important to have an organized process to follow, in order to ensure the smooth functioning of the programme. Figure 1.1 exhibits the procedures followed when offering the PGDE programme. Within the OUSL context, the procedure starts with issuing applications, then the registration, after registration the inauguration and academic activities will commence. After completing academic activities tutorial sessions are conducted prior to the final examination. The final examination and awarding the degree is the final activity in this process. In an ODL context, it is important to consider the student perception regarding the existing context.

Significance of the Study

Distance learning is a mode of learning at a distance, without coming in to regular face-to-face contact with a teacher in the classroom. In such an environment, it is very important to regularly monitor what students think about the programme. The present study is an analysis of the quality of the programme based on the student perception when offering courses in an ODL mode. The study assesses how the student perceives the delivery mode, their intentions, problems faced by them and their suggestions to uplift the programme. Therefore, the present study has direct implications for the OUSL as an ODL institute which cater to the teacher education sector continually involving large numbers. Above all, it is important for researchers, distance teacher educators and the institute to gather data from student teachers on what they need and prefer the problems they face and what they want to be done for them. Unless we do this, we cannot achieve what we want from distance education.

Research Objectives

- What made teachers to select distance learning mode?
- What are the student teachers perceptions on the teaching - learning process offered through the in distance mode?
- What are the student teacher's perceptions on learner support services provided in the teaching learning process?
- What barriers are faced by the student teachers when they engage in the distance learning mode?
- What are the student teacher's suggestions to enhance the existing distance teaching learning process?

Methodology

The population of the study was 1624 student teachers who have registered for the Post Graduate Diploma in Education Programme in the Sinhala medium at the Open University of Sri Lanka in the academic year 2014/2015. A purposive sample was selected based on the cluster system of the Regional and Study Centres of the OUSL. The selected cluster consisted of one Regional Centre and three Study Centres; Namely, Colombo Regional Centre, Ratnapaura, Kalutara and Gampaha Study Centres. The sample consisted of 25% of the students who have registered in the selected cluster. A detailed questionnaire in line with the research objectives were implanted as the main instrument of data collection. The questionnaire consisted of multiple choice questions, structured and semi structured questions along with open ended questions. A focus group discussion was conducted in order to gather more descriptive data.

Table 01: The Sample

Centre	Number of Students Registered	Sample
Colombo	197	50
Gampaha	104	25
Kalutara	100	25
Ratnapura	98	25
Total	499	125

Data Analysis

The sample consisted of 86% of female teachers and 14% of male teachers. Out of the sample 82% of them had experienced of 1-3 years in the field, and 10% had experience of 4-6 years while 8% had experience of 6-9 years in the teaching field. In the sample, 92% of them have graduated from conventional universities and they were not experienced in the ODL context.

Though a majority of the teachers were not experienced the ODL context, many have extended their desire to continue their post graduation in an ODL context. Due to this the study focused on what made the teachers select this programme offered by the OUSL.

Table 2: Reasons for Selecting Distance Learning Mode

Reasons for Selecting OUSL	Percentage
Convenience in continuing the academic activities	88%
ODL mode helps me to keep a balance between family, profession and academic activities of mine	78%
Possibility of time management	62%
As I have not been selected for any other programme offered by the other institutes	-

As shown in table 2, a majority of the sample has chosen the ODL mode considering the convenience of continuing academic activities. At the focus group discussion it was further revealed that they were happy to have the modules and limited contact sessions to solve their academic problems. Further, almost all the students were aware that self study is more important when continuing an academic programme in the ODL mode. Moreover, it was further revealed that they have selected this programme as it was convenient to reach the centre from their hometown. This was significantly highlighted in study centres. It is noteworthy that none of the student at Colombo centre has responded to this aspect. Further, almost all female teachers have stated that they have chosen this programme as the ODL mode helped them to maintain a balance between their family commitments, professional exertion and academic activities. It is significant that none of the male teachers have not made any response in this regard. Moreover, it was revealed that the teachers were concerned about their time management. At the focus group discussion it was revealed that they had compared the conventional system in line with ODL. They believed as adult learners, that the ODL system helped them to manage their time in line with their busy schedules. This reveals that teachers as adult learners have chosen the ODL mode with a purpose after comparing ODL with the conventional teaching learning processes.

The study focused on the student perception on the how the programme has been offered and conducted in open and distance mode. For this question, 87% of the sample has been responded. It was revealed before applying this course they have surveyed how the programme is being offered. Their responses are mentioned in the table 03.

Table 3: Teachers' Perceptions on the Teaching - Learning Process

Responses	%
Develop my skills	71
A wide range of learning experiences	68
More choice to engage in learning and flexibility	60
Facilitated academic support	56
Need to improve ability in attend any centre island wide to cover academic activities	14
Need to improve the on-going academic support	10
Self learning is promoted	05

According to table 3 almost all the teachers have expressed a positive attitude towards how the programme is being offered via distance mode. This finding is supported by a research conducted by Hannay & Newvine (2006). The main objective of this programme is to provide professional training to those who are in the field of education. It has been revealed that the programme objective has been achieved as it is in line with the responses of the students. Out of the responded, 87%, 71% have stated that the stipulated academic activities helped them to develop their professional skills in teaching. In addition, 5% of the sample has stated that as they had obtained their bachelors from OUSL they were happy to engage in self learning. It was further revealed that the students were able

to enhance their skills based on the specific learning activities designed in line with the syllabus. 68% have stated that they were satisfied with the range of learning experiences provided. At the focus group discussion it was revealed that students were happy to engage in Activity Based Day Schools as well as Activity Based Assignments Day School. The designed activities have helped them to understand the theoretical background as well as its application to practice. Further, 60% have stated that, there were different learning activities and assessment activities that helped them engage in the learning process with flexibility. Continuous assessment plays a vital role in this programme. It is compulsory to obtain a minimum pass mark from the continuous assignments given to sit the final examination. Students were happy to engage in continuous assignments as there was flexibility in selecting. Students were continuously supported by the internal and external resource persons and 56% of students have stated in this regard. But it was significant that some of the students were not satisfied with the support provided by the external staff as they failed to give exact information or advice regarding the problems they had. Further OUSL consisted of 24 regional and study centres island wide. Though there were several centres, the students who enrolled on the PGDE programme are informed to attend the centre where they had registered the first time. This procedure has been practiced for the convenience of the administrative processes. It was revealed that 14% were not happy with this process. They were happy if anybody could attend any centre and complete the academic activities assigned. In addition, 10% have stated that they needed on-going learning support when offering a programme via the ODL mode.

Learner support is an integral part of the learning process. When conducting academic activities in an ODL mode learner support plays a vital role. The study further examined the student teachers perception of learner support services provided for the teaching learning process. In the OUSL context learner support services are being provided, starting from the issue of applications till award of the degree. This study has focused on the learner support provided from the administrative viewpoint and academic viewpoint. Table 4 illustrates the student teachers response in this regard.

Table 4: Student Teacher's Perceptions on Administrative Learner Support Services Provided

Learner support provided: Administrative Perspective	Colombo - Regional Centre		Rathnapura - Study Centre I		Kaluthara- Study Centre II		Gampaha- Study Centre III	
	Satisfactory (%)	Not Satisfactory (%)	Satisfactory (%)	Not Satisfactory (%)	Satisfactory (%)	Not Satisfactory (%)	Satisfactory (%)	Not Satisfactory (%)
Pre-registration instructions and guidance provided	62	12	56	05	67	-	55	-
Service received at the process of Registration	53	40	85	-	78	12	68	-
Receiving course materials	100	-	100	-	100	-	100	-
Communication with relevant officers for Administrative purposes	42	35	78	-	64	-	62	-
Clarity in Financial procedures and process	10	02	08	-	18	01	12	03
Satisfactory services from the centre staff	38	35	89	-	95	-	92	-

Learner support that relates to administrative purposes was in line with six aspects. It was significant that all students were 100% satisfied with receiving course materials on time. But with regard to other administrative learner support services rendered, the student satisfaction differs. When comparing the four centers it is significant that students attached, to study centres were satisfied with the administrative support received compared to the students attached to regional centres. With regard to

the support rendered during the registration process more than 65% of the students attached to study centres were satisfied with the service provided by the centre where they are attached to. From the sample 53% those who were attached to regional centres were satisfied with the services received while 40%, a considerable percentage was not satisfied with the support received at the registration. At the focus group discussion it was revealed that students had been standing long in the queue which had stressed them out. In addition the problems in the online system has delayed the process too. The same ideas were highlighted by the students attached to the Kalutara study centre as well. Further, it was revealed that students attached to study centres were happy with regard to the communication process, they had followed with relevant officers with regard to administrative purposes, compared to the students attached to the main regional centre. More than 60% of each study centre has stated they were satisfied with the communication process they had followed with relevant officers with regard to administrative purposes while 35% students attached to regional centre were not satisfied with regard to this aspect. At the focus group discussion it was revealed that students attached to the study centres had maintained a positive relationship with the centre administrative staff while regional centres students had a comparatively official relationship.

It is also significant that students attached to all centres were not aware of the financial procedures they had to follow. It was further revealed that, though all the details regarding the financial procedures, including the administrative procedures were given in writing. But, the students had not paid that much attention in reading and understanding the instructions provided.

Table 5: Student Teachers Perceptions on Academic Learner Support Services Provided

Learner support provided : Academic perspective	Colombo - Regional Centre I		Rathnapura- Study Centre I		Kaluthara- Study Centre II		Gampaha- Study Centre III	
	Satisfactory (%)	Not Satisfactory (%)	Satisfactory (%)	Not Satisfactory (%)	Satisfactory (%)	Not Satisfactory (%)	Satisfactory (%)	Not Satisfactory (%)
Instructions provided at the inauguration about the programme	89	06	92	-	88	-	94	-
Make awareness of the academic activities and its process from the beginning	89	-	90	-	88	-	96	-
Specific instructions provided on the teaching learning process	61	15	88	5	65	12	82	07
Support received to complete take home continuous assessment	15	65	12	35	30	48	15	47
Clarity of day schools conduct	65	02	75	10	62	8	69	16
Help and guidance provided at tutorials	88	-	89	-	90	-	90	-
Making awareness on examination process	74	-	80	-	83	-	77	-
Academic counseling received during the process	65	08	85	05	80	08	76	-
Satisfactory support received from the mentor	15	43	-	-	-	-	-	-
Online support for academic purposes	15	-	5	-	5	-	5	-

Before commencing the academic activities an inauguration is conducted in each centre explaining how the academic activities, practical components, learner support services, administrative procedures, examination process are considered, in line with the whole programme. It examined students' perception of the learner support rendered with regard to academic purposes as well. It was significant more than 80% of the students attached to selected centres were satisfied with the instructions provided at the inauguration about the programme in line with the help and guidance provided at tutorials and provision of awareness of the examination process. It is also evident, that though the majority of the students were satisfied with the clarity of day schools conducted; they were expected that the quality of the discussion made on course content should improve. The students have mentioned that they would have been happy if the academics were motivated in using PPT, discussions to be led related to updated research findings and not repeat what is in the module etc. In order to support student teachers were facilitated with online learner support services, but it is significant that a majority of the teachers attached to selected centres were not motivated to seek online support. It was further revealed that students tried to contact academics via telephone or meet them during the day school.

Within the ODL context students do face different barriers while they are engaged in the teaching learning process. Table number 06.

Table No 6: Problems Faced by the Student Teachers

Problems They Faced	Percentage
How to use study materials	52
Clarity in some context in the course materials	16
Understanding the assignments	26
How to answer the assessments	35
Time taken to Return the Marked assignment on time	96
Problems related to teaching practice	33
Completing the school based project	12
Receiving help from the school mentor	43
Rigid rules and regulations in the process	56

As mentioned above 96% of the students have stated that they were worried about their marked assignments being returned on time. The majority of the students have stated that they received all marked assignments at the end of the contact session on the relevant subject. They were happy if they could receive the first set of assignments before submitting the second, as they could correct their weak points according to the feedback provided. In addition, 56% of students were not satisfied with the rules and regulations implemented with regard to their academic and administrative process. Students have problems with regard to the admin procedure implemented towards assignment, as they had to submit a few assignments immediately. At the focus group discussion it was revealed that students wanted to have their results on activity based assignment at the end of the session. In order to help students during their teaching practice period, it appointed a school mentor. But 43% of the students were not able to get the expected support of the mentor as they were busy with their own activities most of the time.

In order to solve the above mentioned problems student teachers have made several strategies. With regard to the delay in the marked assignments, student has waited patiently until they were received. But it was revealed that students attached to study centres were able to receive their marked assignments earlier compared to the central campus. This has happened because in study centres there is a smaller number of assignments received compared to the regional centres. As the procedures were rigid students have adhered to the process as they had no other option. This finding is supported by a study conducted by Attri in 2012. It was further revealed that students attached to study centres practiced somewhat lenient procedures based on humanistic grounds compared to the main centre. Further, it was revealed that students attached to study centres were able to maintain a positive relationship throughout the process. With regard to academic problems they had, they have sought help from their senior colleagues who had completed this programme. Peer learning, reading extra books, by searching internet helped them.

Student teachers made following suggestions to overcome the existing problem with the programme,

- Create awareness on how to use course materials and its activities
- Provide awareness on how to proceed in learning as they lacking experience of the ODL context
- Technology should be incorporated with the teaching learning process.
- Facilities available in the centres needed to be updated
- The number of students allocated to a one group should be restricted to 30-35
- Limiting the number of students may help them to engage in learning activities in an interactive manner

Conclusion

The principle goal of the PGDE programme is to provide professional training to graduate teachers and other graduates in the field of Education. Within the ODL context, it is important to identify the perceptions of student teachers on how the programme is being offered. In this study it was revealed that, though there were hiccups while offering the programme, they had not negatively affected the smooth functioning of the programme. The students have identified strengths and weakness in the programme. In addition, students have made some suggestions to overcome the existing situation and enhance the quality of the programme.

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EXPLORATION OF PLAGIARISM PRACTICES IN OPEN AND DISTANCE LEARNING (ODL)

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Abstract

Open and distance learning (ODL) system is unique, flexible, less costly and preferable mode of education across the world. It is an attractive mode for, life long, adults and on job education especially, in developing countries. Intellectual Property Rights (IPR) concept and its related laws and procedures are new in the education system of Pakistan particularly plagiarism. This study was an attempt to analyze and discuss plagiarism practices. Following were the objectives of the study: i) to find out the causes of infringement of intellectual property rights especially plagiarism. ii) Explore the views of students and faculty on responsibilities of administrator to enforce the plagiarism policy. iii) And compare the opinions of faculty and learners on implementation of plagiarism policy. The population of the study was all enrolled research students (M.Phil and Ph.D) of Education (2012-2013) and the faculty AIOU. (Sample consisted of 25 learners, 25 faculty members). Sample was drawn through purposive sampling technique. Questionnaire was self developed on five points likert scale. It was validated through expert opinion (face validity) and administered. Data was analyzed in IBM SPSS 20.0. The overall analysis of the first part of the questionnaire revealed that ten causes of plagiarism were highlighted by the respondents which included the following: i) students may have fear of failure to cope with other's intellectual work, ii) poor time management skills, iii) less or no skill to integrate other's intellectual work and idea. Following recommendations of the study have been proposed on the basis of analysis of the data to eliminate or lessen the plagiarism practices. A policy about using sources may include in the course syllabus. Honor code may be established for all students. Scholarly discussions may be arranged during course workshops for the development of analytical and independent thinking. Plagiarism detection services may be used cautiously and in case of violation of plagiarism policy taken disciplinary actions against learner and advisor.

Keywords: *Open Distance Learning, Intellectual Property Rights, and Plagiarism policy*

1. Introduction

Distance learning is a system and a process that connects students with distributed learning resources. It takes a wide variety of forms; distance learning takes place without the physical presence of the teacher with the students as in traditional learning system the benefits of distance learning are cost-effectiveness, quality of instruction, flexible and self directed. Plagiarism policy and Intellectual property rights are equally implemented on distance educational intellectual work and material.

According to world Intellectual property organization, (2004) intellectual property is defined as names, images, symbols, literary and artistic works and innovations, researches or intellectual activity in commerce, literary, industrial, scientific and artistic field. This property has two descriptions; one is property element other is objects related to property elements. It is non-physical, intangible rights and legal rights. IPRs have been recognized as human rights in article 27(2) of Universal Declaration of Human Rights (UDHR) 1948 that everyone who is the author of any scientific, literary or artistic production has the right to protection. Article 17(1) of the general right of property proclaimed the recognition of the interests of owners in UDHR (Drahos & Smith, nd). Paris convention 1883(PCPIP) and Berne convention 1886 (BCPLAW) were two treaties to recognize the value of intellectual property and administered by WIPO (WIPO, 2004). Copying the idea or textual material from authors' work dishonestly, unacknowledged and without citation is known as plagiarism which leads to litigation (Saunders & partners, 2007). Following situations are considered as plagiarism: Stealing another's paper, buying something written, intellectual work of someone else, borrowing phrases and ideas and calling it as one's own work (Clabough & Rozychi, 2001).

The Higher Education Commission is the regulatory authority of universities in Pakistan which published a document called HEC Plagiarism Policy 2009. The preamble of HEC policy defines the plagiarism menace is necessary for punitive actions to give recognition to scholarly work. The aim of this policy is to bring awareness, behavior changes among the researchers, academicians, learners and public about the process of investigation, disciplinary action to prevent researches and publications from plagiarism and about plagiarism. This policy authorized all institutions to make ensure awareness and apprise all stakeholders. In case of infringement of right, complaint may file in HECP or respective universities. In simple words this policy covers the reporting, investigation, penalties, right to appeal for plagiarism. (HEC Policy, 2009) HEC policy document defined responsibilities and procedures to protect the intellectual property rights as time bound standard operating procedures for plagiarism cases (www.hec.gov.pk). It is also necessary to understand the causes of cheating among students for proper enforcement and educate the academicians and learners about plagiarism. Meanwhile, precaution measures may be taken by giving clear and specific assignment to the learners, make oral presentations about the assignments, find the problems of learners while creating writing and help them to overcome (Harris.R, 2012). Open and distance learning is an approach and an educational process which provides freedom from time and place boundaries with flexible education opportunities (UNESCO 2003).

Open educational practices use and produce high quality of educational resources with innovative teaching learning methods and techniques (ICDE, 2013). In this scenario Allam Iqbal Open University Islamabad Pakistan, a mega Asian Open university was established to provide affordable and accessible education through open distance learning at the door steps of learners without geographical and time restriction (AIOU, 2013). As public body Universities are fair and just implementers of rules and procedures, so any plagiarism allegation must be considered with prudent. (Saunders & Partners, 2007). Open distance learners have limited opportunities to interact or face to face interaction with Academicians and supervisors. Students were not formally informed and guided about the concept of plagiarism in their coursework ultimately quality of research suffered a lot. Plagiarism practices may be avoided by the development of research courses and study guides (Mahmoud, 2013).Learners were failed to acknowledge others' work in a good faith. Burden lay on teaching and learning. It is a collective responsibility of learners, teachers and administrators to provide a climate of academic honesty. The best practices are explanations of plagiarism policy, quality of assignments and tasks, development of reading and writing habits and proper disciplinary actions (CWPA, 2003).

2. Statement of the Problem

Intellectual property Rights have been recognized as human right in article 27(2) of universal Declaration of human rights 1948. It is plagiarism when an author is copying the idea or textual material dishonestly, unacknowledged and without citation from author's work. Therefore Higher Education commission of Pakistan established plagiarism policy in 2009 to administer the intellectual property law. This study was to explore the plagiarism practices in open and distance learning system.

3. Objectives of the Study

Following were objectives of the study:

- (i) To find out the causes of infringement of intellectual property rights specially plagiarism.
- (ii) To explore the views of students and faculty on responsibilities of administrator to enforce the plagiarism policy.
- (iii) To compare the opinions of faculty and learners on implementation of plagiarism policy.

4. Research Questions

The main research questions were:

- (i) What are the causes of plagiarism in open distance learning?
- (ii) What practices may be applied to eliminate plagiarism?

5. Delimitations of the Present Study

Due to time and financial constant delimitations were:

- (i) The population of this study was both faculties of education and computer science, Research students of education (M.Phil + Ph.D) enrolled in 2012-2013 Allama Iqbal Open University Islamabad Pakistan.
- (ii) Sample size of this study was 25 members of faculty of education and 25 research students. (Allama Iqbal Open University)

6. Methodology

The study was descriptive in nature and based on school survey. To elicit the information self-developed questionnaire was developed for academicians of education and prospective PhD scholars on the basis of the objectives of the study to explore the causes of plagiarism and proposed the practices for to eliminate plagiarism. All the data were tabulated and analyzed which lead to recommendations and suggestions for effective implications of plagiarism policy in academic research work. The population of the study was all enrolled research student of education in PhD 2012-2013, and the faculty of education Allama Iqbal Open University Islamabad.

7. Sample Size

Sample consisted of 25 learners, 25 faculty members of AIOU. Sample was drawn through purposive sampling technique and the random sampling from learners' population of AIOU.

8. Research Instrument

The research tool was administered and data were collected personally through the questionnaire. The questionnaire was self-developed five points likert scale (Strongly Agree, Agree, Un-certain, Disagree, Strongly Disagree). It was consisting of 19 statements covered two areas_ (i) Causes of plagiarism and (ii) Practices to eliminate plagiarism. The tool was validated through five expert opinions (face validity).

9. Application of Statistical Techniques

The primary sources of data collection were questionnaires administered to faculty Members and learners. Secondary sources of data collection were review of literature in local and global perspective. The data were analyzed in the light of objectives of the study. The percentage of each item under each statement was calculated for meaningful interpretation; then t- test for comparison of two respondents was apply. The data were further presented and illustrated in the form of tables.

10. Data Analysis

Data collected through the questionnaire consisted of 19 questions and five sub-scales which were as under:

Table 10.1: Subscales of Research Instrument

S.No	Sub Scales Implications of IPR in ODL	No of Statements
1.	Causes of Plagiarism	10
2.	Practices to Eliminate Plagiarism	09

Table 10.2: Analysis of Opinion of Respondents on Causes of Plagiarism (N = 50)

S.No	Statements	Results	SA	A	UNC	DA	SDA
CAUSES OF PLAGIARISM							
1.	Fear of failure to cope others intellectual work	Frequency	05	30	10	04	01
		%age	10	60	20	08	02
2.	Fear of taking risks	Frequency	05	25	08	12	-
		%age	10	50	16	24	-
3.	Poor time management skill	Frequency	17	24	06	-	03
		%age	34	48	12	-	06
4.	No choice other than plagiarize	Frequency	34	-	05	-	11
		%age	68	-	10	-	22
5.	Student views the consequences of cheating as unimportant	Frequency	30	-	08	11	01
		%age	60	-	16	22	02
6.	So generic assignment and tasks	Frequency	30	-	04	07	09
		%age	60	-	08	14	18
7.	Less knowledge about how to integrate other ideas and work	Frequency	18	22	-	05	05
		%age	36	44	-	10	10
8.	Define plagiarism differently and strangely	Frequency	10	27	13	-	-
		%age	20	54	26	-	-
9.	Wrong assumption about students' knowledge of rules for research and documentation	Frequency	16	28	06	-	-
		%age	32	56	12	-	-
10.	Geographical and Environmental diversity of ODL students causes an infringement of IPR	Frequency	06	19	11	07	07
		%age	12	38	22	14	14

It is evident from the table 10.2 that 70% respondents are agreed with the statement that fears of failure to cope others intellectual work, 60% agreed that fear of taking risks, 82% agreed that poor time management skill, 68 % agreed that no choice other than plagiarize, 60 % agreed that student views the consequences of cheating as unimportant, 60% agreed that So generic assignment and tasks, 80% agreed that less knowledge about how to integrate other ideas and documents in appropriately, 74% agreed that define plagiarism differently and strangely, 88 % agreed that wrong assumption

about students' knowledge of rules for research and documentation, 50% agreed that geographical and environmental diversity of ODL students causes an infringement of plagiarism policy. Majority of respondent were agreed that statements about the causes of plagiarism in the ODL and 30% disagree to the statement.

Table 10.3: Analysis of Opinion of Respondents on Practices to Eliminate Plagiarism (N = 50)

S.No	Statements	Results	SA	A	UNC	DA	SDA
PRACTICES TO ELIMINATE PLAGIARISM							
1.	Include a policy about using sources in the syllabus	Frequency	27	15	08	-	-
		%age	54	30	16	-	-
2.	Establish horror code for all students	Frequency	17	33	-	-	-
		%age	34	66	-	-	-
3.	Scholarly discussion, thinking analytical and independently	Frequency	11	34	05	-	-
		%age	22	68	10	-	-
4.	Assignment to explore a subject in depth	Frequency	25	20	-	05	-
		%age	50	40	-	10	-
5.	Establish course theme and then allow to define a specific issue or problem	Frequency	28	22	-	-	-
		%age	56	44	-	-	-
6.	Support on each step of the research process	Frequency	25	25	-	-	-
		%age	50	50	-	-	-
7.	Use of computer, email etc.	Frequency	24	20	-	05	01
		%age	48	40	-	10	02
8.	Use of plagiarism detection services cautiously	Frequency	39	08	02	01	-
		%age	78	16	04	02	-
9.	Use of disciplinary actions	Frequency	27	18	03	02	-
		%age	54	36	06	04	-

Data placed and illustrated in Table No.10.3 indicates the statement about practices to eliminate plagiarism and it is evident that 84% respondents agreed that to include plagiarism policy about using sources in the syllabus or part of teaching. 100% respondents agreed that establish horror code for all students, 90% agreed that scholarly discussion, thinking analytical and independently may be practice during teaching learning process. 90% agreed that assignment may be as to explore a subject in depth. 100% agreed that establish course theme and then allow defining a specific issue or problem for critical and analytical thinking development. 100% respondents agreed that support on each step of the research process either from the department and supervisor is necessary. 88% respondent agreed that use of computer, email etc skill will helpful avoiding infringement of copy rights. 90% agreed that it use of plagiarism detection services cautiously may be reduced that plagiarized practices. 90% respondent agreed with the statement that use of disciplinary actions may helps to eliminate the plagiarism and implement the IPR in ODL.

Table No.10.4: Comparison Analysis of Opinion of Respondents on Causes of Plagiarism (N = 50)

Respondent	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df
				Lower	Upper		
Learner	15.4800	6.17873	1.23575	-2.23402	4.55402	.687	48
Faculty	14.3200	5.74978	1.14996	-2.23448	4.55448		

Table 10.4 indicates $t = .68$, $df = 48$ as the value is non-significance at $t = .68$ but difference exist between learner and faculty on causes of plagiarism.

Table No.10.5: Comparison Analysis of Opinion of Respondents on Practices to Eliminate Plagiarism(N = 50)

Respondent	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df
				Lower	Upper		
Learner	14.5200	5.54617	1.10923	-2.98734	3.14734	.052	48
Faculty	14.4400	5.23673	1.04735	-2.98760	3.14760		

Data placed and illustrated in Table No.10.5 indicates the $t = .05$, $df = 48$ value is significance at $t = .05$ which more differences seen in learner category to the statements that practices given in statements 01 to 09 may helps to eliminate the plagiarism and implement the IPR in ODL.

11. Conclusion

This study concludes that higher education plagiarism policy on plagiarism consist of laws, rules and appropriate disciplinary actions and the mechanism for enforcement of intellectual property rights. Major causes of plagiarism are that students have fear of failure to cope others intellectual work, taking risks, poor time management, less or no skill to integrate others intellectual work and idea. The idea about the plagiarism was defined by faculty as well as students differently and strangely, especially student's perception about rules, ethics of research and referring others intellectual work were wrong.(Table 10.2) Following recommendations of the study have been proposed on the basis of analysis of the data to eliminate or lessen the plagiarism practices. A policy about using sources may include in the course syllabus. Horror code may be established for all students. Scholarly discussions may be arranged during course workshops for the development of analytical and independent thinking. Plagiarism detection services may be used cautiously and in case of violation of plagiarism policy taken disciplinary actions against learner and advisor. (Table 10.3)

12. Recommendations

In the light of the conclusions drawn from the research following suggestions were recommended:

1. A mandatory pre-programme course either an online or existing mode of distance education may be introduced.
2. For awareness IPR day may be celebrated in university campus.

3. Course coordinators may develop scholarly thinking and guide to maintain proper documentations among the learners while conducting course workshops, assignment development and course revision.
4. Support services for learners may be established either online or region based research cell.
5. Communication of the convention on plagiarism may be initiated for implementation and to stop the violation of intellectual property rights in the open distance learning.

13. Abbreviations

A	Agree
AIOU	Allama Iqbal Open University Islamabad Pakistan
BCPLAW	The Berne Convention for the Literacy and Artistic Work 1886
CWPA	Council of writing Program Administrators
DA	Disagree
HEC	Higher Education Commission
HECP	Higher Education Commission Pakistan
ICDE	International Council for Open distance education
IPRS	Intellectual Property Rights
ODL	Open and Distance Learning
PCPIP	The Paris Conventions for the Protection of Industrial Property 1883
QAD	Quality Assurance Division
SA	Strongly Agree
SD	Strongly Disagree
UDHR	Universal Declaration of Human Rights
UND	Uncertain
UNESCO	United Nations Educational Scientific and Cultural Organization
WIPO	World Intellectual Property Organization

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ENHANCING ON-LINE TEACHING AND LEARNING USING A STANDARD TEMPLATE – A CROSS-CULTURAL MANAGEMENT TOPIC EXAMPLE

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Abstract

One of the key success factors in determining the success of an on-line learning program is engaging learners, which requires inculcating learners with a high degree of self motivation. Engaging learners becomes of strategic significance in terms of achieving learning outcomes set in the subject curriculum as well as to evaluate whether actual learning has taken place. This task becomes even more difficult with working adults who have left the classroom for a long time with some who are not comfortable with the use of information technology and its tools. Thus, academicians need to design appropriate teaching materials and templates that would be easily assimilated and applied by these learners, at the same time helping them to enhance their critical and analytical skills. In this paper, a standard template has been developed to serve as an example of how quality in teaching and learning could be enhanced for a Cross-Cultural Management on-line course. The use of exercises, short case studies, videos, questions and also other related on-line materials are included in the template. These are used to foster a more engaging learning environment where learners can experience the different aspects of cross-cultural management and make strategic decisions as an International Manager. The example given shows how the topic learning outcomes and learning materials to the assessment for the topic, giving an overall view of how a properly template could be used to help academicians design other business courses, especially in management from the lower levels of Bloom's Taxonomy up to the highest levels of evaluation and synthesis. Learners could also benefit by the template as they can study by themselves and are guided by the questions and exercises that are given. Learners would also be able to gauge the level that they need to be at in order to pass their examinations through the formative assessment included in the course. Through this, the quality of teaching and learning would be enhanced.

Keywords: *Quality, Teaching and Learning, On-Line Learning*

1. Introduction

Engaging learners is of strategic significance in terms of achieving learning outcomes set in the subject curriculum as well as to evaluate whether actual learning has taken place. One of the key success factors in determining the success of an e-learning program is engaging learners actively which requires learners to have a high degree of self motivation (Ali, 2009). At tertiary level, difficulties in engaging learners online are a problem that needs to be addressed. Due to the National Agenda of wanting to be a developed country by year 2020, the success of this endeavor partially lies in encouraging creativity and innovation. Thus, Malaysian citizen needs to inculcate the values of openness which embraces critical thinking and encouraging risk taking and experimentation (Tenth Malaysia Plan, 2011-2015). Learners need to be encouraged and nurtured to be innovative, creative and analytical. As such, engaging learners becomes of strategic significance in terms of achieving learning outcomes set in the subject curriculum as well as to evaluate whether actual learning has taken place.

2. Statement of Problem

Malaysian employers in the corporate sector have constantly voiced their complaints regarding the employability of local graduates as our local graduates are said to lack critical thinking skills and analytical abilities. Thus, universities need to design programmes to inculcate these skills and abilities, especially using information and technology which is now prevalent in the marketplace. This task becomes even more difficult with working adults who have left the classroom for a long time with some who are not comfortable with the use of information technology and its tools. Thus, academicians need to design appropriate teaching materials and templates that would be easily assimilated and applied by these learners, at the same time helping them to enhance their critical and analytical skills. This paper presents a template which can be used to do this.

3. Literature Review

Many factors have an impact on the quality of ODL including the establishment of a high quality teaching faculty, quality education resources, a well-established learning assistance, strict assessment system and comprehensive monitoring approaches (Deming, 2008). Jarvis (2008) stated that the art of teaching is still possible in distance education through the people who design the teaching and learning process. According to him, the art of teaching lies in our empathising with the learners and thus entering into an interpersonal relationship with them. Teachers and designers have to embrace a human perspective, learn of methods, experiment with them and develop techniques using the available methods (Jarvis, 2008). This is also supported by Richardson and Newby (2006) who suggested that academics and practitioners should explore how teachers or tutors can influence learning designs and strategies in order to engage learners in their learning activities. Ulrich (2008) for example, cited several examples where dynamic elements were used in learning resources. Animations or interactive simulations replace static pictures in the original course content. Games can also be included to apply knowledge by hands-on training (Ulrich, 2008).

Learners generally do not care about the technologies behind the process but they expect their communications, information and services to improve their learning within the constraints of their lifestyle as adult distance learners (Gallagher, 2007). Edirisingha (2009) found that learners benefited from online interaction because communicating with peers developed their self-confidence. Some learners were not confident giving views in the face-to-face sessions and thus using an online forum was important to increase their level of satisfaction.

Carnwell (2000) proposed that students use different approaches to study in distance learning depending upon their preferred style of learning, and that this is mediated by the learning context and materials design. The combination of factors will determine the nature and extent of guidance required by individual students. This is important as current trends indicate that student numbers are projected to continue increasing and basically students will fall between two types—those who are information and communication technologies savvy and have previous experience of online learning, and those who are completely new to information technology (Motteram and Forrester, 2005). As global conditions continue to transform, universities will face continuing and increasing rates of change and higher education institutions will need to compete in a competitive, market-driven environment (Graham, 2012). Ultimately, students and institutions both have responsibilities for the quality of student learning. Students need to work hard to develop their own knowledge and skills, and institutions need to provide the appropriate environments to facilitate student learning (Axelson and Flick, 2011).

4. The Sample Template

Week: 8
Topics Covered:
• <i>Definition of Cross-culture communication</i>
• <i>Communication process</i>
• <i>Cross-culture communication procedures and guidelines</i>
• <i>Cultural variation in the communication process</i>
Learning Outcomes:
• <i>Differentiate between cross-culture communication and normal communication</i>
• <i>Apply procedures and guidelines which must be observed in cross-culture communication</i>
• <i>Explain six cultural variations that exist in several cultures in cross-culture communication</i>
Self-Activities:
• <i>Watch Videos.</i>
• <i>Read relevant chapter in module (hard copy or html version)</i>
• <i>Do given exercises in forum</i>

Video
Title of Video: Cross-Cultural Communication

Video Script: Cross cultural communication
<i>Good morning everyone! I'm Dr Wardah from the Faculty of Business and Management, Open University Malaysia. Today, we're going to discuss cross cultural communication and the cultural variations which exist across cultures.</i>
<i>Cross cultural communication refers to the communication between people of different cultures. Due to the differences in cultural values that we looked at in video 1, there is bound to exist difficulties when communicating with people from different cultures.</i>
<i>There are basically six different cultural variations in the communication process:</i>
1. <i>Language variation</i>
2. <i>Time variation</i>
3. <i>Social behaviour variation</i>
4. <i>Contract enhancement variation</i>
5. <i>Space and distance variation; and</i>
6. <i>Formality variation.</i>

<i>Let's look at each one in turn.</i>
<i>Language variation refers to two things – one the differences between two languages. Two, the differences in meanings of the same word in the same language across different cultures.</i>
<i>For example, let's say Ahmad, a four year old Malay boy meets Jose, a four year old Spanish boy. Ahmad would probably say "Apa khabar?" while Jose would say "Como esta?" which both mean How are you...</i>
<i>They could probably guess what each other means but they would not know for sure if they only know their own language...</i>
<i>The same word can also mean different things to people from different cultures...</i>
<i>Let's look at some examples:</i>
<i>Homely in the US implies plain or boring while in Britain it is taken to mean friendly.</i>
<i>The word "bloody" in Australia is used to put emphasis on a situation , for example "bloody hot" while in European and Asean it is considered a rude word and should not be said in public.</i>
<i>Time variation also occurs in different cultures. In countries like Japan and Germany, you should never be late! In Spain, it is normal to be late and things are postponed all the time. I remember when I was working there that the favourite word is manana...manana...which means.. tomorrow...tomorrow....There it is expected that things will be postponed or delayed. This is also normal in many Arabian and African countries.</i>
<i>Now watch this short clip on social variation. Can you identify the differences between cultures?</i>
<i>People eating with hands vs with fork and spoons vs chopsticks</i>
<i>Forms of greeting – shaking hands, hugging, nods, Japanese bowing</i>
<i>Etc</i>
<i>Another important cultural variation is the form of contract enforcement. Some countries like America for example, contract enforcement is important while in Somalia and Afghanistan , contracts are not considered as a serious matter.</i>
<i>Distance variation refer to the space and distance in face-to-face interaction.</i>
<i>Insert clip;</i>

People in Arab countries prefer close distances while Americans and British tend to stand further apart. However, people in Arab countries do not normally mix with the opposite gender while in Western countries it is the norm.

There are also variations in the level of formality in different cultures. The Japanese for example, are very formal in discussions and jokes are not acceptable. Americans however, use jokes to create a more friendly atmosphere.

Latin Americans tend to be very informal in their business transactions while the British and French are very formal.

Now, let's see whether you can recall what we have discussed today.... Have fun identifying and describing the social variations in the video clip....see you next time!

Exercises

in forum:

- Explain what you understand by cross-cultural communication
- What are the six variations in cross-cultural communication?
- Describe each variation using your own example.

Slides attached in the forum:



LANGUAGE VARIATION

Language variation refers to two things – one the differences between two languages. Two, the differences in meanings of the same word in the same language across different cultures.



EXERCISE: LEARNERS TO
BREAK INTO GROUPS
AND GIVE EXAMPLES OF
LANGUAGE VARIATIONS

TIME VARIATION

Time variation also occurs in different cultures. In countries like Japan and Germany, you should never be late! In Spain, it is normal to be late and things are postponed all the time.



Think!! What would be the consequences or impact on business if people from different cultures are conducting a negotiation?



SOCIAL BEHAVIOUR VARIATION

The way food is sold and eaten is considered a social variation. Compare the street vendor in Alexandria above and the food kiosk in Tokyo. What can you infer from this?



CONTRACT ENHANCEMENT VARIATION

Some countries like America for example, contract enforcement is important while in Somalia and Afghanistan, contracts are not considered as a serious matter.





Distance variation refer to the space and distance in face-to-face interaction.

People in Arab countries prefer close distances while Americans and British tend to stand further apart. However, people in Arab countries do not normally mix with the opposite gender while in Western countries it is the norm.

SPACE AND DISTANCE VARIATION

Assessment

Assignment:

Select TWO cultures from different countries around the world. Write a literature review on the variations across these two cultures citing examples for each variation.

Practise exam questions:

Part A Questions: (Knowledge and Comprehension)

1. Explain the term culture.
2. Give an example of social variation in culture.

Part B Questions: (Application and Analysis)

1. Explain social variation culture and give examples of these from the different cultures in Malaysia.
2. Compare and contrast space and distance variation between Asian countries and Western countries.

Part C Question: (Synthesis and Evaluation)

1. You have just been appointed as a training manager for a multinational corporation operating in Malaysia. The company has dealings across the globe and employs people from many nationalities.
2. Assume that you need to conduct an orientation session for new employees which covers cross-cultural communication and how it affects the effectiveness of a multinational corporation. Prepare for the session.

Case Study
(Source: http://www.professional-business-communications.com/cross-cultural-training-case-study):
Challenge
<i>A US manager in charge of a group of international employees was experiencing major problems getting his team to work and cooperate together. He was working with a Chinese-born woman and a German-born man— all three were very competent, high-tech professionals.</i>
<i>There were quite a few areas in which the three had problems. One of the problems was centered on direct/indirect communications and how each person handled the way he/she spoke to the other team members [explicit/implicit]. The German was the most outspoken of the group—he expected to be able to express what he thought in a manner that was perceived as overbearing and he was also intent on driving the project solution himself.</i>
<i>The US manager found the German’s directness hard to accept because it frequently sounded accusatory. The Chinese employee, on the other hand, didn’t contribute much to the discussion, just adding a few words when she felt she could make a point.</i>
<i>Discussions and frustrating communications went on for weeks, with each team member becoming quite unhappy and with no solution in sight for completing the project.</i>
Solution (to be given by e-tutor after student submission)
(a) <i>Interview each team member individually to isolate his / her most pressing problems and concerns. The information we gathered was shared among the team, but individual points were kept anonymous.</i>
(b) <i>Determined that people from three different business cultures could often approach problems and projects in three distinct ways;</i>
(c) <i>Find ways to work with the German, Chinese and American participants to share these distinctions and provided meaningful coaching on how they each could contribute effectively to reach solutions collectively and successfully.</i>

5. Analysis and Discussion

One of the key success factors in determining the success of an on-line learning program is engaging learners, which requires inculcating learners with a high degree of self motivation. Engaging learners becomes of strategic significance in terms of achieving learning outcomes set in the subject curriculum as well as to evaluate whether actual learning has taken place. Thus, academicians need to design appropriate teaching materials and templates that would be easily assimilated and applied by these learners, at the same time helping them to enhance their critical and analytical skills.

Dewey (Smith, 2007) iterated that education must involve engagement for exploration, thinking and reflection. Taking these views in mind, the template prepared for a topic in Cross-Cultural Management has been designed to encourage learners’ to actively participate in the learning process and most of all, to actually enjoy the learning process.

The content for the course is to be delivered to the learners mainly through video lectures. The videos have been designed to attract learners' attention and engage them in the learning process by including animated graphics, real-life case examples and also exercises. This is in line with Ulrich's (2008) observation that dynamic elements should be used in learning resources and these would include animations or interactive simulations. This is also supported with slides on the same topic so that learners could further assimilate the knowledge gained from the video.

Three questions or exercises were also included to be discussed in the forum. It is expected that learners will benefit from this due to the nature of the questions, which encouraged discussion and critical thinking. However, the discussion through the forum might not be fully successful as Kuboni and Martin (2004) pointed out that the discussion board, in this case, the forum's use might be limited as some learners might feel that their face-to-face tutorial sessions was enough. They found that frequent postings by instructors did not, on average, lead to more student postings; moreover, the more the instructor posted, the shorter were the discussion threads, on average. In addition, in cases where instructors started discussion threads, those threads were shorter than those where students initiated the discussion. This notwithstanding, the study also found that instructors who posted infrequently were likely to be perceived by students as not having great expertise.

The template also included the application of authentic experience based learning strategy for adult learners. Under this strategy, learners use their own experience to improve their learning process (Haverita et al., 2009) via the use of exercises and discussion questions which related to their own experience and life. Projects and cases were given to learners too, with the condition that the schedule is accommodative enough and the expectations clearly spelt out along with a specific time frame (Haverila and Barkhi, 2009). These projects should encourage creative thinking and reflection as given in the sample assignment and case study attached in the template.

Sample exam questions were also included at the end of the template where learners were given questions on the topic but on different levels of learning, such as they will encounter in their final exam papers. The rationale behind this is that assessment drives learning and that learners who know what to expect in their exams could better study for it. The aim of this is to increase the quality of learning to a higher standard according to the different levels of Bloom's (1956) taxonomy.

The template actually combines different avenues of learning for the learners to explore as one of the challenges for distance educators is being able to properly meet the various needs of different learners. A significant implication for online teaching and learning is that learning can be controlled by the student to a greater extent and independently. In this case, the learner can choose to watch the video, go through the slides, work on questions on discuss with other learners in the forum. The responsibility for learning also falls more on the learner as a result, and the tutor's role is that of a "guide" who provides information, tasks, and activities, and facilitates a range of possible routes while providing assistance where required (Motteram and Forrester, 2005). This is in line with what was proposed by Zydney and Hasselbring (2014) (a) a narrative story given through the video (b) Slides which represent cross-cultural concepts visually (c) a generative format enables students to discover the problems and sub-problems that need to be solved via exercises and discussion questions (d) data embedded within the video and slides which learners can use to solve the exercises and assessment questions (e) the problems presented are complex with multiple steps and include both relevant and irrelevant data that students need to decipher between and transfer their knowledge.

Basically, the template used the concept of mini anchors for learning as shown in the UDL framework below:

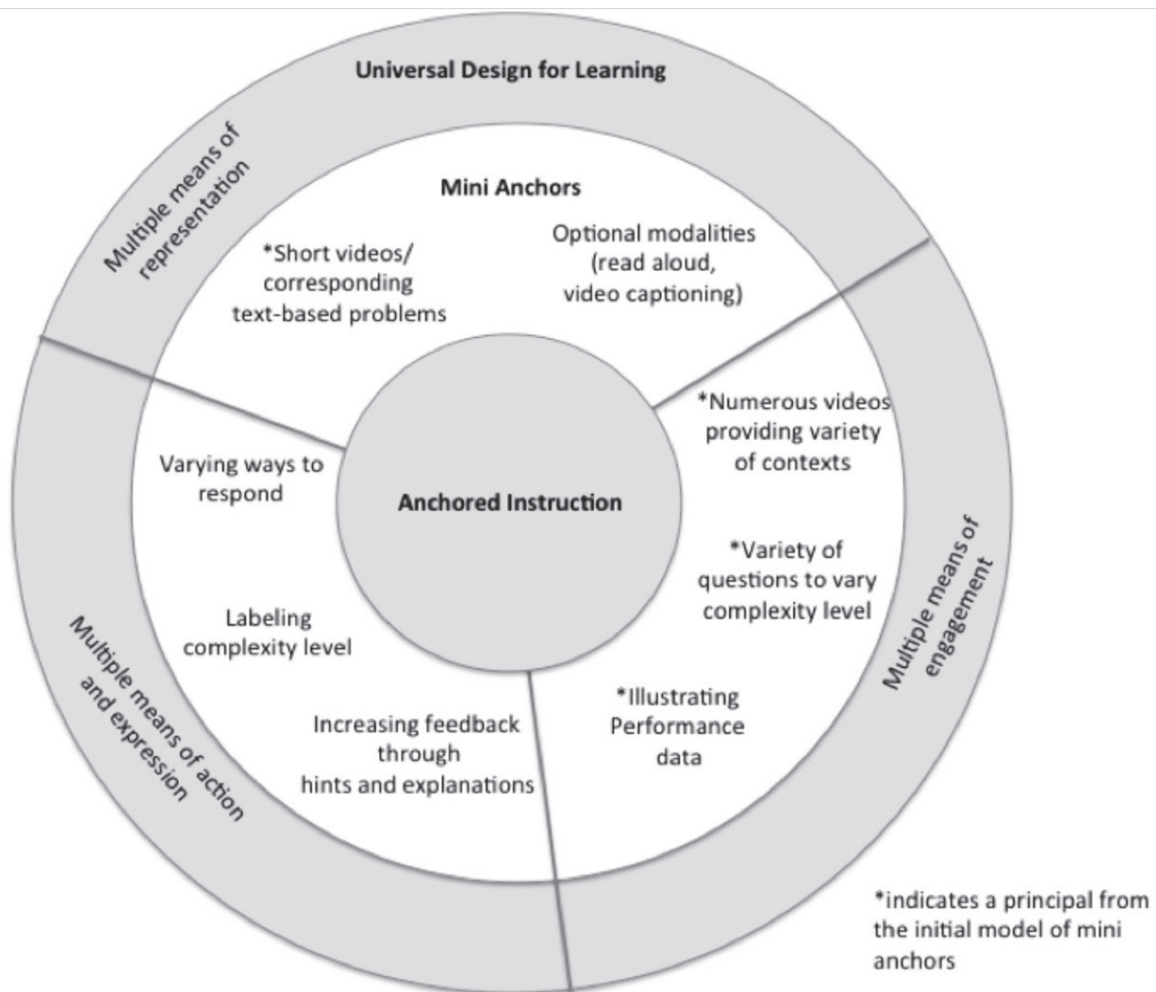


Figure 1: The UDL Framework combined with mini anchors

Underlying the UDL framework is a deep understanding of brain research and how learners differ across three interconnected neural networks: recognition, strategic, and affective (Zydney and Hasselbring, 2014). For example, there might be variation in learners' capacity to use their recognition network to process information, or in how they act on information with their strategic networks, or in their awareness and motivation in learning through their affective networks (Rose & Meyer, 2002). As shown in Figure 1, this initial model of mini anchors recommended (a) using short (30 to 90 seconds) video narratives with embedded data and corresponding text-based problems, (b) offering numerous videos to illustrate the same content in multiple ways across a variety of contexts, (c) presenting a variety of questions for each video to adjust the complexity levels to provide challenges and assistance based on students' learning needs, and (d) embedding the anchors in a computer-based program to illustrate performance data to students. These four initial design principles aligned with the UDL principles of providing multiple means for representation and engagement (Zydney and Hasselbring (2014). As can be seen, the template has utilized all of these elements and anchors except for the last one. However, in this case, learner performance is available through the university's administrative system for students.

The value attributed to distance education has largely been established and the relative success rates of online courses versus traditional models are without question (Huett, Moller and Young, 2004). Russell (1999) found that students in distance learning environments learn as well, if not better, than their face-to-face counterparts. If the past is any indicator, the demand for distance education will only continue to grow at a fast rate. Universities need to constantly upgrade the use new technologies, particularly computer-mediated communication for teaching and learning, which is a challenge facing all educational institutions (Motteram and Forrester, 2005). Therefore, it is necessary for universities to keep pace with the changes and do the best they can to offer a dynamic, interactive learning environment that can meaningfully engage the learner (Huett, Moller and Young, 2004). It should be noted that the attitudes of all members of the faculty are also critical to the success of any distance education program (Jones & Moller, 2003) as faculty members are the ones who are responsible for developing the online courses.

6. Conclusion

In this paper, a standard template was developed to serve as an example of how quality in teaching and learning could be enhanced for a Cross-Cultural Management on-line course. The use of exercises, short case studies, videos, questions and also other related on-line materials are included in the template. These are used to foster a more engaging learning environment where learners can experience the different aspects of cross-cultural management and make strategic decisions as an International Manager. The example given shows how the topic learning outcomes and learning materials to the assessment for the topic, giving an overall view of how a properly template could be used to help academicians design other business courses, especially in management from the lower levels of Bloom's Taxonomy up to the highest levels of evaluation and synthesis. Learners could also benefit by the template as they can study by themselves and are guided by the questions and exercises that are given. Learners would also be able to gauge the level that they need to be at in order to pass their examinations through the formative assessment included in the course. Through this, the quality of teaching and learning would be enhanced.

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Asian Association
of Open Universities



Sub-Theme 5

Open Knowledge Movement

PROCEEDINGS

ONLINE LEARNING IN FACING CULTURAL PROBLEMS: A REVIEW ON UNIVERSITAS TERBUKA ONLINE TUTORIAL

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Abstract

Online learning is one of many solutions for developing countries like Indonesia and other Asian countries to trigger national's education level. In online learning, students wouldn't be limited by time and places as long as there is an internet connection, and it's supporting device like PC or laptop, available. The problem with online learning is that, knowing its ability to cover time and places across nations, it still has to face cultural problems. This could also cause delayed learning process and low learning performance. A total of 79 subjects were studied and 16 items were included in the questionnaire for dimensions of culture and online learning. Subjects were asked to fill and explain their experiences in online learning, cultural problems and obstacles faced during online learning. Data collected then analyzed with Strauss and Corbin's comparative method. Result of this study showed 88% of subjects stated that online learning still has to face cultural problems and the effect could be varied depend on subjects background study and online learning experience. 52% of subjects suggest that a guide must be provided to help new online learner to overcome cultural problems faster. A short effective and efficient explanation at the start of the web was the most liked form of guide for new online learner.

Introduction

Advancement in communication and internet technology has fostered improvements in many different fields including education. Universities and other educational institutes could expand global outreach through Open and Distance Learning (ODL) system and multiple international institutions collaboration. One of universities in Indonesia that has been known for applying ODL system and collaborating with international institutions is Universitas Terbuka (UT) which has integrated with Asian Association of Open Universities (AAOU), Global Mega University Network (GMUNET) and International Council for Open and Distance Education (ICDE). Since 1999 until today there have been six tutorial models that has been developed and applied in UT (Belawati, 2000), that are face to face tutorial, mail-written tutorial, mass media-written tutorial, email-written tutorial, radio broadcast tutorial and interactive radio broadcast tutorial.

In distance learning, the instructional delivery included an instructor who was physically located in a different place from the learner, as well as possibly providing the instruction at disparate times. Dede (1996) elaborated on the definition by including a comparison of the pedagogical methods used in traditional environments and referring to the instruction as "teaching by telling." The definition also stated that distance education uses emerging media and associated experiences to produce distributed learning opportunities. Both these definitions recognized the changes that were apparent in the field and attributed them to the new technologies that were being made available.

Although the tradition of online learning is growing at an amazing rate, there remain both technical and socio-cultural challenges to implementation. Schneckenberg (2009) argues that underlying challenges to the acceptance and adoption of eLearning in higher education are due to — structural peculiarities of universities and cultural barriers. Unfortunately, these difficulties affect both the novice and the long term user alike. Scholars have reported that some learners are even frustrated with the technology early in the course, and that the technology predisposes these learners to information overload (Attack, 2003). Collis (1999); McLoughlin, & Oliver (2000) also stating that problem with ODL system is although modern communication technologies have afforded increasing flexibility for

transnational course design and delivery, there are concerns exist regarding the social and cultural dimensions of task design, the cultural adaptability of the learning materials and the re-engineering or transformation of courses.

Online tutorial has been held by UT since 1999 and aimed to follow the fast development of information and communication technology. However, current online tutorial through internet has rarely been accessed by UT students even though they don't have to pay extra payment except for the internet bill which has been minimized by UT and wifi-id cooperation to allow UT students connect to internet for free through wifi-id hotspots. Ideal online tutorial activity will be optimal if interactions or communications between tutors and participants or between participants happened often. Wardani (2000) in her research said that interaction and communication are the core of tutorial. Interactions between tutors and students were meant to communicate the material and learning cases so the good and ideal learning process could be achieved. Low rate of interactions and communications could be caused by cultural differences and problems that present in UT online tutorial process.

Given the importance of cultural problems in online learning, understanding what students feel during online learning, whether they are new user or old user so online learning could be modified for further better system. The research reported in this paper attempts to examine which cultural problems students feel and how they want it to be fixed. This paper then briefly explains the methodology, and reports and discusses the findings.

Objective of the Study

The purpose of this case study is to examine the online tutorial held by Universitas Terbuka (UT) with online learning models and future examination in online tutorial models regarding to research's subjects to avoid cultural problems.

Research Questions

To achieve the study objective, the following research questions are formulated:

Do students perceive cultural problems in their online learning courses? How do the students perceive the impact of cultural difference on their online learning? And if they do, what features do the students prefer in the design and delivery of online learning?

Significance of the Study

This study is significant as the research findings obtained are expected to evaluate the online learning system in UT and could be a guidance for future online learning improvement so UT could give better service as an open and distance learning (ODL) institution in Indonesia.

Literature Review of Cultural Problems in Online Learning

Numerous studies have examined the cultural differences in learning, one of them is between Western and Eastern education have provided a consistent picture that describes Eastern education as a group-based, teacher-dominated, centrally organized pedagogical culture with examinations as the essential way to define performance and compete for higher social status (Zhang, 2007). In Eastern education, like Indonesia, teachers have absolute authority and the students are not encouraged to question or challenge a teacher's knowledge (Biggs & Watkins, 1996). On the other hand, in Western education, to challenge a teacher or tutor is seen as part of the self-development process as dialogue and interaction are encouraged in the learning process (Robinson, 1999).

Olaniran (2007) state that cultural norms, traditions and values, greatly influence both learning decisions, and learning outcomes. These factors not only increase uncertainty within the e-learning environment, but they also heighten the need for a culture centered design and development of the Web Based Instruction technology like UT's online tutorial. However, it is also important to look at the dimensions of cultural differences to understand exactly how culture affects the usage, or technology within a society.

The four dimensions of cultural variability consist of power distance, uncertainty avoidance, individualism, and masculinity (Hofstede, 2001). More than arbitrary categories of culture, these four dimensions result from data collected from fifty countries and three world regions (Hofstede, 1984). Past research has used these dimensions to operationalize cultural differences and their effects on intercultural communication interactions (Sanchez-Franco, Martinez-Lopez, & Martin-Velicia, 2009). Van Dam & Rogers (2002) discuss design elements and actions for the adaptation of e-learning. Within the uncertainty avoidance dimension, e-learning issues of security and risk are of primary concern using Hofstede's (1980) dimensions of cultural variability. For instance, e-learning is expected to be seen in high-risk countries (i.e., culture) as something intriguing and potentially fun, motivational and interesting; while in a high security country it can be perceived as dangerous, or downright risky. Power distance, which is a measure of inequality in a given culture, suggests that in high equality cultures, concerns arise as to the expectations that knowledge is being shared or distributed equally. In a high status culture, however, expectations call for — telling strategies where the knowledgeable are required to teach whatever is needed to be learned (Sanchez-Franco et al., 2009).

Reeder, Macfadyen and Chase (2004) state that different cultural communication patterns increased miscommunication, and that the greater the perception of cultural differences between the participants in an activity, the greater the incidents of miscommunication. Shattuck (2005) observed that international online learners felt a “sense of marginalization, or, sometimes even alienation” from the American learner group even in a highly interactive communication learning environment. However, other studies shows that “external identities” (Walker-Fernandez, 1999) or “cultural negotiation” (Goodfellow & Lamy, 2009) could mitigate cultural differences of the online participants in online education.

Collis (1999) proposed the “flexible” approach, which suggests that the courses should be flexible enough to cater to diverse cultural perspectives, rather than simply containing pre-determined content. The central notion of the flexible approach is that the key aspects of course design should be contingent on the cultural dimension of the course, and should be flexible enough to allow the students and instructors to choose their own learning and teaching styles as the course progresses.

Methodology

This study was designed as an exploratory study aimed at understanding the emerging cross-cultural issues in transnational learners. The case study approach is considered appropriate for such exploratory research because it is considered to be the best in regard to explaining “how” and “why” issues in a complex contemporary social phenomenon (Yin, 2002). The participants were all distance learning students in Universitas Terbuka Indonesia who are currently living in Indonesia and abroad and also public online learners on the internet. A questionnaire was developed by adapting the instruments from Georgia Tech College of Computing's cultural issue surveys with some changes to identify possible obstacles and study relation of cultural rights and cultural diversity (Georgia Tech's, 2009).

Research Design and Sample

A total of 79 subjects were studied and 16 items were included in the questionnaire for dimensions of culture and online learning. Subjects were asked to fill and explain their experiences in online learning, cultural problems and obstacles faced during online learning. For a better elucidation of students' preferences in online learning, they were asked for suggestions to avoid cultural problems in online learning.

This study use Strauss and Corbin's constant comparative method (1990) in order to triangulate the data from the different interview transcripts. According to Patton (1990), Strauss and Corbin's constant comparison method was appropriate to be used in the analysis of the different question responses because we cross-case grouped the answers. We followed the below steps when analyzing the interview data.

- Researcher reviewed the transcripts carefully and made notes of the important patterns, themes and categories that emerged from the data.
- The reviewed transcripts were later analyzed again to compare with previous summaries of key categories and themes. Similar themes or categories were grouped together. The frequencies of each theme or category were marked.
- After each researcher completed their independent analysis, three researchers validated and discussed their coding decisions until a common set of codes based on all of the transcripts was determined.

Questionnaire

The questionnaire in this study consist of five sections, which are:

1. Subjects identity based on age, background study and occupation.
2. Subjects experience as internet user.
3. Subjects experience as online learner.
4. Subjects experience on cultural problems in online learning.
5. Subjects suggestion for better online learning.

Data Analysis

Profil of Respondents

Table 1 presents the profile of the 79 respondents who participated in the survey.

Table 1: Distribution of Respondents by Place of Live, Background Study, Experience in Using the Internet and Experience in Online Learning

Demographic Variables	No of Respondents	Percent
Place of Live		
Indonesia	61	78
Foreign country	18	22
Total	79	100
Background Study		
No schooling or elementary school	2	2,5
High shcool or vocation	46	58
Diploma degree	2	2,5
Bachelor degree	27	34,5
Master degree	1	1,25
Professional degree	1	1,25
Total	79	100
Experience in Using the Internet		
Since when did you start using internet?		
1-3 years	9	11
4-7 years	34	43
8-10 years	21	27
More than 10 years	15	19
Total	79	100
Since when did you start using internet daily?		
1-3 years	26	33
4-7 years	36	45,5
8-10 years	11	14
More than 10 years	6	7,5
Total	79	100
Experience in Online Learning		
Time using internet in a day		
1-2 hours	12	16
3-4 hours	22	27
More than 5 hours	45	57
Total	79	100
Time for online learning in a day		
Less than 1 hour for online learning	6	7,6
1-2 hours for online learning	36	45,6
3-4 hours for online learning	20	25,3
More than 5 hours for online learning	17	21,5
Total	79	100

Further research then done to find wheter subjects cultural problems in online learning and their suggestion for better online learning. Result of the interview was shown in Table 2 below:

Table 2: Subjects' Experience on Cultural Problems in Online Learning

Demographic Variables	No of Respondents	Percent
Do you think internet could affect culture?		
Yes	69	88
No	10	12
Total	79	100
Have you adjusted to the culture differences on the internet?		
Yes	77	97
No	2	3
Total	79	100
On your early days using internet, did you find it hard to understand the content?		
Yes	37	47
No	40	50
Abstain	2	3
Total	79	100

Subjects then interviewed for the impact of cultral problems and further suggestion for online learning subjectively and will be discussed on discussion section.

Discussion

As reflected in the interviews, internet user and online learner could be varied from non-formal educated to highly educated people. Education level could affect how people face cultural problems. Several studies have found that adult literacy courses and literacy teaching improve self-esteem, personal autonomy, creativity and critical thinking which are important to adapt to different culture. Given their intrinsic value, these benefits may produce others directly or indirectly related to literacy, as stated by the UNESCO report on Education for All. Such benefits include improved health and increased political participation or social integration (UNESCO, 2005).

Results also show that subjects who spent more time on the internet tend to not feeling any cultural problems while using the internet and stating that guide won't be needed for new internet user. However, they admit that they faced problems at their early time using the internet. This could be in accordance to Lee and Johari (2004) who examine web based instruction use in China and note that the technology platform introduces a — Westernized, liberal democratic method of communication. Meanwhile, in Eastern education, like Indonesia teachers have absolute authority and the students are not encouraged to question or challenge a teacher's knowledge (Biggs & Watkins, 1996). On the other hand, subjects who have been using internet or doing online learning in a long time successfully adapted to Western education. Robinson (1999) state that student who have been accustomed to Western education could challenge a teacher or tutor is seen as part of the self-development process as dialogue and interaction are encouraged in the learning process or in other word are more independent.

Moreover, 88% of subjects said that internet could affect its user culture and 97% of all subjects said that they have been adjusted with the culture on the internet. This also means that culture plays a major role in triggering online learning culture and as accordance to Olaniran (2007) that stating cultural norms, traditions and values, greatly influence both learning decisions and learning outcomes. For guidance, 52% of subjects said that a guide must be provided and short guide would be more preferred. The reason was varying from low rate of understanding in older generation to the faster understanding for all people in all age and all background education. Most suggested form of guide is a short, effective and efficient explanation at the start of the web and followed by video explanation and complete explanation module. The other 48% are still don't know whether a guide will be needed or not because a guide could be useless for people who are already open minded, some said that online learning are already easy to understand and the other said that new user should be able to learn by themselves or with help from their families or friends.

Since 1999, there have been six tutorial models that has been developed and applied in UT (Belawati, 2000), that are face to face tutorial, mail-written tutorial, mass media-written tutorial, email-written tutorial, radio broadcast tutorial and interactive radio broadcast tutorial. Study done by Kardako (2000); Puspitasari & Islam (2003) shows that study independence rate in UT students are still low and could affect the learning achievement, persistence, retention and accomplishment. It means that there are still improvements need to be done and one of them is to improve online tutorial in its cultural aspect described before.

Conclusion

Culture, like norms, traditions and values, greatly influence both learning decisions and learning outcomes so that cultural problems that could reduce learning performance should be avoided so effective, efficient and good online learning could be achieved. How people react to cultural problems in online learning could be caused by many factors but some of them are background education and students' online learning experience. A guide could assist students in facing cultural problems and the best form of guide would be a short explanation at the start of the web.

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OPEN ACCESS REPOSITORIES ON OPEN EDUCATIONAL RESOURCES: FEASIBILITY OF ADOPTING THE JAPANESE MODEL FOR ACADEMIC LIBRARIES

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Abstract

The increasing proliferation of technological strategies including open sources and commercial licence softwares, are causing librarians to take a bold step in redefining their professional roles in this information and communications technology (ICT) savvy society. Triggered by the advancement of ICT, open access repositories (a variant of digital libraries) is one of the important changes impacting library services. While most institutional repositories' content is scholarly and intellectual, the degree of openness provided to the wider community to access their resources forms an entry point to open knowledge. It is in this context that Wawasan Open University Library initiated a research project to build open access repositories on open educational resources (ROER). Open educational resources (OER) is an area of a multifaceted open movement in education. The purpose of this paper is to show how two web portal repositories on OER materials were developed adopting a Japanese open source software, called WEKO. The design approach is based on a pull to push strategy whereby metadata of scholarly open access materials kept within the institution and network communities digital databases were harvested using the Open Archives Initiatives Protocol for Metadata Harvesting (OAI-PMH) method into another open knowledge platform for discovery by other users. Positive results emanating from the University open access repositories development showed how it strengthen the role of the librarian as manager of institutional assets and successfully making the content freely available from this open knowledge platform for reuse in learning and teaching for the institutional benefit and network communities of practice in OER. This paper also describes future collaboration work with local and regional institutions in sharing their open access resources, hence creating knowledge sharing across institutions even though it is just metadata sharing. In conclusion, this paper provides insight for academic libraries on how open access repositories development and metadata analysis can enhance new professional challenges for information professionals in the field of data management, data quality and intricacies of supporting data repositories and build new open models of collaboration across institutions and libraries.

Keywords: Academic library; Repository; Open Educational Resources; Open source software; OAI-PMH interoperability; WEKO

Introduction

The sharing of knowledge and information, particularly through information and communications technology (ICT) have a significant impact on people's lives. According to UNESCO (UNESCO, n.d., para. 2), open access, open data and crowd sourcing [this is not an open source production but a problem-solving model, opens to an online community through the Internet] platforms, and open educational resources [*also referred to as OER*] enable information to be freely and legally shared, providing strategic cross-cutting opportunities to improve the quality of decision-making as well as facilitate policy dialogue, knowledge sharing and capacity building.

The concept of OER movement emerged in the late 20th century with the development of open and distance learning amidst a culture of open knowledge, open source, free sharing and peer collaboration (Karunanayaka & Naidu, 2014). OER as defined by UNESCO (UNESCO, n.d., para. 3), provides teachers and learners with high quality teaching and learning materials that allow for free use, adaptation, and distribution. With the advancement of ICT, it has reshaped the landscape of academic libraries as well, thus libraries really have to redefine their functions, roles and services in order to stay relevant in this new landscape of the future (Liau, 2011). Such development can be perceived as a threat whereby the traditional libraries can become redundant amid the new emergence of technologies or an opportunity to improve and fulfil users' information needs. The major impact of the advancement of ICT in this open knowledge movement has also opened up users to the world of freeware and open source software easily available from everywhere. Today, many libraries rely on freeware and open source software to manage many of the daily operations work (Corby, 2014).

Institutional repositories can be seen as a species of digital libraries and it is also an aspect of a trend where librarians are moving into publishing to offset what is perceived as their shrinking conventional role (Adolphus, 2014). Institutional repositories is a strategic move for libraries to support educators in searching, sharing, reusing of existing contents and creating additional resources through collaboration with other institutions in a structured way.

This paper discusses the development and experience of building repositories on OER (ROER), a research project carried out by the Wawasan Open University (WOU) Library in February 2014, in collaboration with the National Institute of Informatics, Japan and the Open University of Japan. The research, which was a part of the University's Open Educational Research Initiatives which started in year 2012, focused on the involvement of the Library as an organizational unit, and of individual librarians and other information technology staff to set up two web portal repositories using the Japanese open source software, called *WEKO*. The outcome of this research project contributes to the current repositories called WOU OER Repository (<http://weko.wou.edu.my>) and OER@AsiaHub (<http://oerasia-repository.wou.edu.my>).

Being the first non-Japanese user of this open source software, the paper aims to share the experiences gained from conducting the research project. The repositories developed are far from an ideal implementation of institutional repositories, as more effort is needed to promote awareness and generate interest from prospective stakeholders in the community to contribute their institutionally produced open educational teaching or learning contents and disseminate open knowledge resources.

Current Analysis of Open Access Repositories in Asia

*OpenDOAR*¹, an authoritative directory of open access repositories, developed by University of Nottingham, United Kingdom, shows the contribution of top five continents worldwide from a total of 2,958 repositories (as at 31 August 2015). This is depicted in *Table 1*.

Table 1: Repositories Distribution by Continent

No	Region	No. of Repositories	%
1	Europe	1,304	44.1
2	Asia	595	20.1
3	North America	571	19.3
4	South America	260	8.8
5	Africa	128	4.3

Repositories by Region

In terms of number of repositories, the results revealed that Asia, shared second ranking having 595 repositories. A research study on open access repositories carried out by Fayaz (2014), stated that during that period Asia region share of repositories was 400 repositories out of total 2,299 and this number has increased to another 195 (49%).

Repositories by Country

In comparison of repositories by countries in the Asia region, *Table 2* below shows that Japan contributed the highest number of repositories (189, 31.8%), followed by India (70, 11.8%) and thirdly Turkey (62, 10.4%). The Japanese institutional repositories can be accessed both individually or collectively through a single web portal called JAIRO (Japanese Institutional Repositories Online), using JAIRO Cloud² computing facility. The number could be higher (Adachi, n.d.) as many of the institutional repositories in Japan have not registered with *OpenDOAR*. According to Yamaji (2014), current number of institutional repositories in Japan is 478, whereby 184 (38%) are using JAIRO Cloud, and 294 (62%) are by university own development.

Table 2: Repositories by Country in Asia (595)

No	Country	No. of Repositories	%
1	Japan	189	31.8
2	India	70	11.8
3	Turkey	62	10.4
4	Taiwan	58	9.7
5	Indonesia	46	7.7
6	China	40	6.7
7	Korea, Republic of	28	4.7
8	Malaysia	21	3.5
9	Others	81	13.6

¹ *OpenDOAR* – Directory of Open Access Repositories. Retrieved from <http://opendoar.org/>

² JAIRO Cloud – Retrieved from <https://community.repo.nii.ac.jp/>

Repositories by Software Used

The open access repositories movement has created three main players of open source software. They are *Dspace* (Massachusetts Institute of Technology and Hewlett Packard), *Eprints* (University of Southampton) and *Fedora* (Cornell University) (Adolphus, 2014). The most popular software being used to design and manage their contents is *Dspace* (367, 61.7%), *Eprints* (82, 13.8%) and *WEKO* (39, 6.6%), as shown in *Table 3*.

Table 3: Softwares Used in Asian Repositories (595)

No	Software	No. of Repositories	%
1	DSpace	367	61.7
2	Eprints	82	13.8
3	WEKO	39	6.6
4	Others	82	13.8
5	Unknown	25	4.2

Due to the great strides made by the open access movement, Malaysia is also becoming an active contributor establishing institutional repositories and open access archives for use of academic and research communities. However the movement and visibility can be considered low. From the 21 repositories (*Table 2*) where Malaysia is ranked at the eighth position (3.5%), 15 are using *Eprints* software (71.4%), followed by *DSpace* (4, 19.0%), *Greenstone* (1, 4.8%), and *unknown software* (1, 4.8%). Currently there is no contributor in Malaysia using the Japanese open source software, *WEKO*.

Table 4: Open source softwares usage in Malaysia (21)

No	Software	No. of Repositories	%
1	Eprints	15	71.4
2	DSpace	4	19.0
3	Greenstone	1	4.8
4	Unknown	1	4.8

Open Source Software WEKO Infrastructure

Spurred by the progress made by repositories on open educational resources (ROER), developed from worldwide repository initiatives, and the realisation that the University needs to embrace open educational practices, the WOU Library initiated its own ROER development project adopting the Japanese open source software, called *WEKO* (a Swahili word meaning repository) as the platform. The creation of the OER institutional repository and the other offshoot, which function as a federated repository for OER Asia network community are aimed at promoting awareness, creation, reuse and sharing of OER among educators in the local and regional institutions, especially for institutions who do not have a repository system.

WEKO platform uses an AJAX-oriented content management system called NetCommons (NC) for effective repository web design. *Figure 1* depicts the system architecture of NetCommons and *WEKO* components. The NetCommons was developed by the National Institute of Informatics in Japan for use by educators. According to Yamaji, Aoyama and Takeda (2009), *WEKO* is an open source software under the New BSD (Berkeley Software Distribution) license. The system is written in PHP scripting language, rendering it OS-independent.

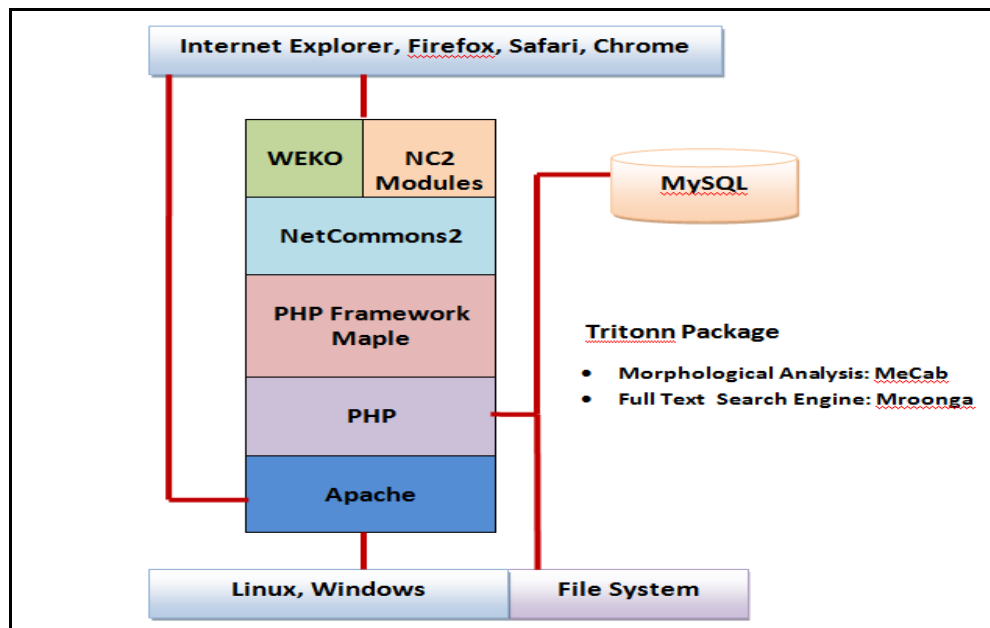


Figure 1: NetCommons and WEKO system architecture (Adapted from Yamaji, 2014)

The NetCommons2 is an information sharing system which acts as a Content Management System, Learning Management System and Groupware. MySQL is used as a relational database backend for storing data from NetCommons and also *WEKO*. The operating system used can be Linux or Windows and for WOU, Linux CentOS platform is being used.

The following *Table 5* depicts the minimum hardware specifications required in order to run the *WEKO* application. The installation information related to *WEKO* software can be accessible from the following website developed by the National Institute of Informatics, Japan - <https://meatwiki.nii.ac.jp/confluence/display/WEKO/Installation>

Table 5: Hardware Minimum Requirements

Operating system	CentOS 6.5
Memory	2 GB
CPU Processor	1 x
Hard disk	50 GB

From the above *Figure 1*, *WEKO* stored contents are found in the MySQL and the tools available will create and process the stored content including via metadata harvesting complying to the Open Archives Initiatives Protocol for Metadata Harvesting (OAI-PMH). The content is the heart of *WEKO* repository in the overall architecture. Other end user services such as searching, repository access allow users and applications to access the stored content.

WEKO other core functions and features include the mechanism to define tree-structure indexes, identify, store, retrieve, import and export digital objects. The search engines, web report statistics analysis and language utilities are also supported. The web modules allow interface customization according to user needs by using the NetCommons2 add-ons modules. The administrative menu provides other general settings and allows single and harvesting multiple deposits of objects. Another useful feature is it supports and is able to translate repository's interface headings labels into ten languages such as Bahasa Melayu, Cantonese, English, Japanese, Chinese, Hindi, Indonesia, Tagalog, Thai and Vietnamese.

Development of WEKO-based Repositories of OER

Chadwell and Sutton (2014) stated that since the 1990s, the development of institutional repositories throughout the world have been monopolised by academic libraries. Among the benefits of having institutional repositories are centralised storage of scholarly output of the University, maximises visibility of output, immediate access to full-text resources, long term archiving and preservation, convenient and easy access to materials, as highlighted by Raseroka and Mutula (2012, p.140).

The following pages of this paper briefly describe the two *WEKO*-based repositories of OER developed by the Library.

(i) WOU OER institutional repository

The approach used to build the content of WOU institutional repository (<http://weko.wou.edu.my>) (*Appendix-Figure 4*) is based on a pull to push strategy whereby metadata information from other open access repositories are collected using the OAI-PMH method into another open knowledge platform for easy retrieval by other users. In compliance with OAI- PMH, this repository supports the interoperability issues. The URL *weko.wou.edu.my* provides information about the University's OER collection, learning objects metadata and other learning materials outputs. Many of the records consist of full-text materials including accompanying images to make the resources more informative and interesting. This repository not only provides an archival function for University's OER outputs but also reflects the University support and contribution to OER movement. Abiding by the University's Open Licence Policy (WOU, 2012. p.3), the repository scope of content is narrowed to Schools and departmental scholarly output such as course materials and research papers. This includes corporate and personal authorship. The open licence model adopted is the *Attribution-Non-Commercial-ShareAlike* (CC BY-NC-SA)³, which means that this licence allows others to remix, tweak, and build upon our work for non-commercial purpose, as long as they credit the author and licence their new creations under the identical terms.

The URL *weko.wou.edu.my* categorised its content according to several subject classification themes (parent tree) and sub-themes (child tree) to facilitate searching and retrieval of records, as shown in *Figure 2*. Record category tagging is done in line with the University library data classification requirement.

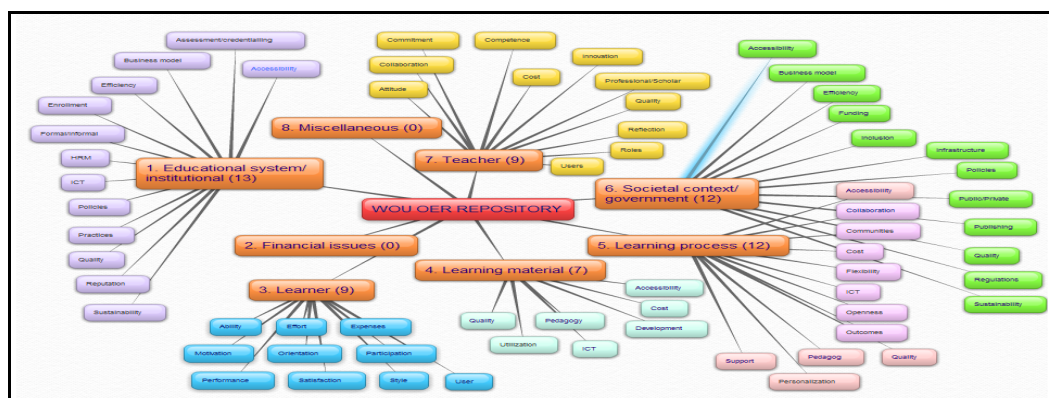


Figure 2: WOU OER repository collections mapping by themes

Based from the *WEKO* webreport usage statistics tool in the repository's learning objects, it has showed a significant contribution that the Library has made on the Internet "marketing" to increase University's visibility.

³ Creative Commons licenses – Retrieved from <http://creativecommons.org/licenses/>

(ii) Federated repository OER@AsiaHub

Another important aspect of institutional repository, which is often overlooked is its potential to function as a collaborative platform (Liau, 2011) for open educational or open access communities. Clifford Lynch (2003), a pioneer in institutional repositories matter defines institutional repository as:

*“a university-based institutional repository is a **set of services** that a university offers to the members of its community for the management and dissemination of digital materials created by the institution and its community members. It is most essentially an organizational commitment to the stewardship of these digital materials, including long term preservation where appropriate, as well as organization and access or distribution” (Lynch, 2003, p.2).*

Thus, the “*set of services*” allows the library to expand this *WEKO* functionality and its boundary to facilitate collaborations with other communities of practice in open access or OER both locally and regionally by collecting varieties of contents from different communities.

The set up of OER Asia (<http://www.oerasia.org>), an Asian Forum to share information, views and opinion, research studies and knowledge resources about OER was primarily the work of a small group of Asian Association of Open Universities members. The network has organised workshops, training programmes, seminars, symposiums on OER and completed mapping exercise of OER activities in a few countries in the continent. The network hopes to embark on its next task of collaboration with the Global Learning Objects Brokered Exchange (GLOBE) (<http://www.globe-info.org>), in creating a federation of metadata repositories. The aim is to provide members open access to metadata description of records in member’s repositories. GLOBE is a one-stop-shop for learning resource broker organisations, each of them managing and/or federating one or more learning object repositories (Dhanarajan, 2013).

With this in mind and moving towards GLOBE collaboration, the set up of another federated repository network, called OER@AsiaHub (<http://oerasia-repository.wou.edu.my>) (Appendix-Figure 5) for the OER Asia communities was developed. It aimed to generate wider participation from the open access communities in contributing and making their open access resources in various academic disciplines available for sharing and reusing. Figure 3 depicts the network concept model of OER@AsiaHub repository.

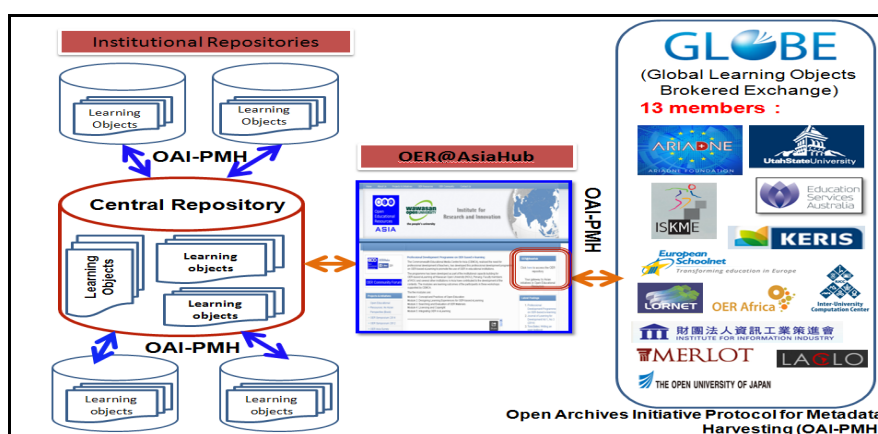


Figure 3: OER@AsiaHub network concept (Kamsiah, Chew & Ch'ng, 2014)

The WOU librarians are actively promoting this repository and encouraging contributions from other network institutions. Universiti Putra Malaysia and the Open University of Japan learning objects are available in this repository. It is hope that the access to this open knowledge platform will support a greater exchange of content for members.

Facilitating Challenges in Building OER Repositories Using WEKO

Undoubtedly, the team faced many challenges in trying to develop the OER repositories. The main building blocks are being the library's infrastructure and expertise to fully understand the *WEKO* infrastructure components.

Application Technical Challenge

The creation of OER repositories initially was hampered by the team members' lack of knowledge of the *WEKO* system. This was mainly due to the lack of technical documentations in English language to enable the team to gain a better understanding of the content management system. Being the first academic library outside of Japan to use the *WEKO* application, the Library was unable to turn to any community of practice. Nevertheless, many technical problems were sorted out via the use of media communication with the technical expertise from Japan. The English version of the user manual (Version 2.1 dated August 2014) [Yamaji(b), 2014] has since been published and made available online.

Content Recruitment and Sustainability

As for the content recruitment aspect of OER, the process of building the content started from scratch by manual depositing and harvesting existing learning objects from another open source repository using Eprints. The work involved were identifying suitable material, digitizing into PDF format and applying appropriate Creative Commons license as per University's open license policy. To increase content recruitment, authors have also been provided a simple way to self deposit through a simple registration. An electronic copy of user guidelines is available on the web portal to facilitate easy indexing and ensure consistency of data input.

Standardised Metadata Interoperability

According to Sharma (2012, p.334), OAI-PMH protocol has been used to support interoperability with other repositories to harvest bibliographic data and it is the major technological innovation of this period. Spurred by the open access movement, the interoperability of metadata level has been the most active area in digital repositories development (Aschenbrenner et al, 2008). Domain specific that support the OAI-PMH protocol to enable exchange or cross-reference of metadata must be traced correctly. Hence, OER@AsiaHub contents also relies on the OAI-PMH compliant metadata exchange acquired from other institution's existing metadata repositories. It is automatically generated from the *WEKO* harvesting environment using OAI-PMH baseURL using appropriate metadata schema such as Dublin Core or Learning Object. Network connection problem can be a bottleneck at times during metadata harvesting. The existing default Japanese metadata schema for Dublin Core or Learning Object required further review and modifications to cater for the local needs and retain as much metadata as possible, without compromising on the value of the learning objects. Nevertheless, the Library has continued to initiate efforts to establish cooperative institutional metadata exchange programme with local libraries and comply the metadata values accordingly.

Quality Assurance

Quality assurance in repositories is a necessary prerequisite for its success. According to Atenas and Havemann (2013), repositories should have certain characteristics in the aspect of social and technical values. Aware of the importance to maintain quality standards, the WOU team has implemented quality assurance indicators such as theme classification, searching tools, authorship, keywords, metadata info and usage statistics.

Copyright Licenses

According to Kleymeer, Kleinman and Hanss (2010), academic librarians somehow have been acknowledged as de facto arbiters for copyright matters where librarians help to address policy challenges. However, not many librarians are knowledgeable on copyright licenses status of the documents deposited and the uncertainty of the copyright status is still a major concern to libraries and librarians. In order to alleviate potential copyright problems, librarians provide advisory guidelines to authors to supply copyright statement, if available, though it may be ambiguous and still does not address the copyright of the item. One of the guidelines adopted by institutional repositories librarian is that, as a matter of policy, all works created and/or developed by staff in the course of carrying out his or her work will automatically belong to the University and must be shared with others. Such work will be made open access and indexed in the institutional repository to allow other interested readers to cite the work. The rationale being the easy accessibility of a work will enable more people to cite the work, contact the author(s) and create discussion opportunities with other researchers. Such visibility will help the staff to build up his/her profile and increased the University's reputation in the international circle.

The institutional repositories librarian will normally advise staff that have signed-over the copyright of the material to a publisher not to submit those materials to the repository.

Discussion and Future Directions

Given the usefulness of *WEKO*, this paper has summarised the following important aspects of the *WEKO* infrastructure which has given four primary contributions in the development of the medium-scale ROERs:

- Managed repository and content development
- Easy website development using varieties of add-ons
- Metadata harvesting with OAI-PMH compliant
- Learning objects reporting usage analysis

Creating open access repositories platform is one good effort but academic libraries must go beyond their roles of just populating their repositories content. Academic libraries do play a significant role in managing OER contents as they possess the expertise in handling activities strongly related to information science field such as system analysis, conforming to metadata standards, indexing and classification records curation, dissemination and retrieval. Despite the constraints faced, there are specific goals which the Library would like to achieve over the next few years. The immediate goal is to add as much open access objects metadata from other institutions to the OER@AsiaHub federated repository and participate into the GLOBE collaboration network.

Conclusion

In summary, this research project has showed that using the Japanese open source model, *WEKO* indeed can be adopted by other institution libraries as it can fulfil the library's requirements, cost saving, easy to install, develop and maintain, does not require the person to be IT savvy to develop the content management system. Moving forward, being the first non-Japanese user of *WEKO* and based from the experience gained, *WEKO* is useful and comparable with other open source applications. Moreover, *WEKO* can serve as a model for future opportunities for cross-campus digitization projects in the University.

Acknowledgements

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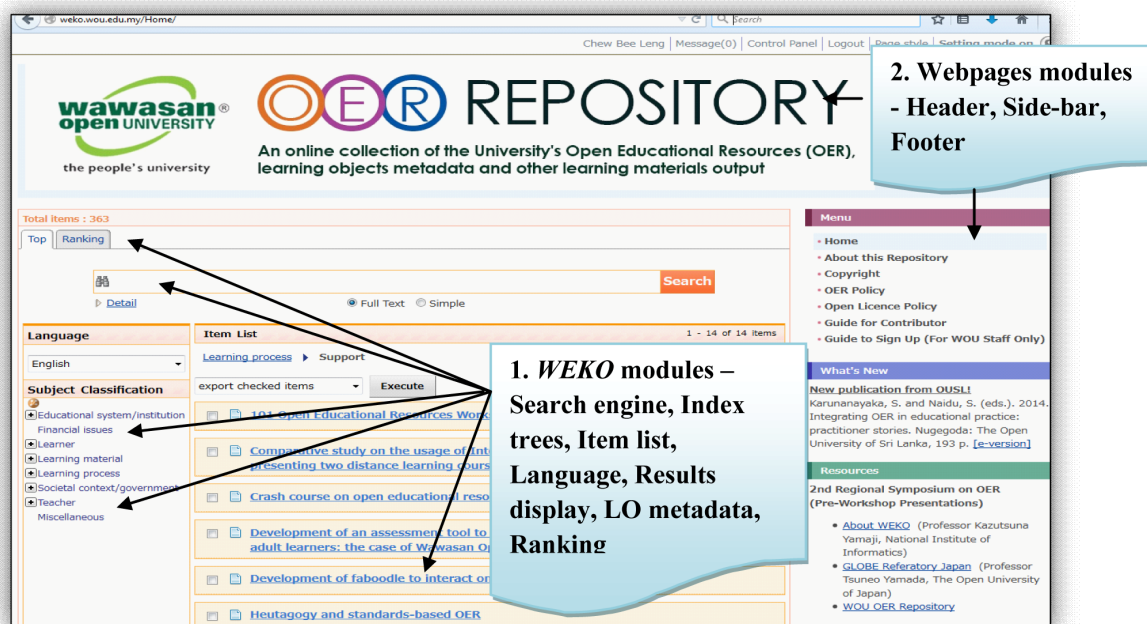
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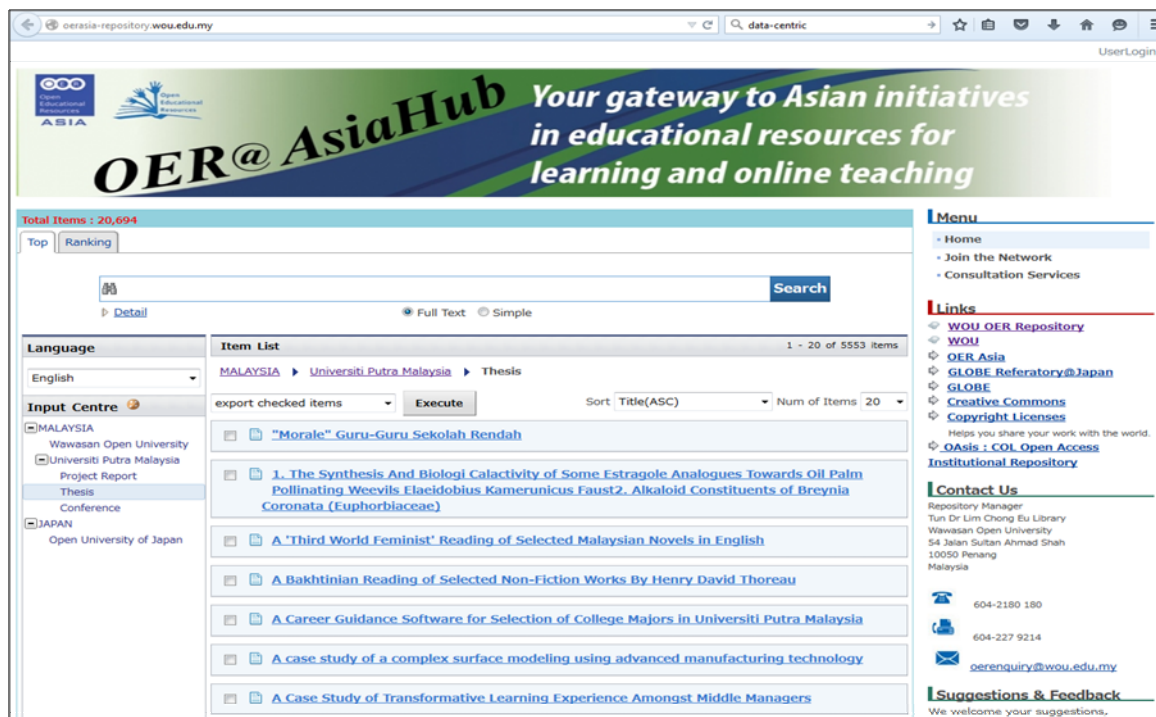
Appendix

Figure 4. WOU OER Institutional Repository (<http://weko.wou.edu.my>)



(367 records as at 31 August 2015)

Figure 5. Federated repository OER@AsiaHub (<http://oerasia-repository.wou.edu.my>)



(20,694 records as at 31 August 2015)

OPEN UNIVERSITY OF NEPAL: A GLOBAL VISION OF HIGHER EDUCATION FOR THE DISADVANTAGED PEOPLE

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Abstract

Nepal has a historically stratified society resulting in systemic disadvantage for its majority population. Despite the fact that education has been long identified as a way to emancipate the people from social and economic disadvantages, the access to higher education remains a distant dream for a large mass. A way to provide them higher education and skills for their employment and better life can be through open and distance learning with flexible access policy. In 2010, Non-Resident Nepali Association (NRNA), the global Nepali diaspora organization, declared the Open University of Nepal (OUN) Initiative as its flagship project and spearheaded the movement to establish the OUN. Continued struggle in this movement has led to tabling the Open University of Nepal Bill in the Nepal's Legislature-Parliament on July 2015. This has now showed the rays of hope for all disadvantaged Nepali adults towards access to higher education. This case-study paper describes the historical development and efforts gone into this initiative by Nepali diaspora, who hold a key stake in the initiative.

Introduction

Nepal has a historically stratified society strained by socio-economic underperformance, stark geographic ruggedness and internal conflicts, resulting in systemic disadvantage for its majority population. Despite the fact that education has been long identified as a way to emancipate the people from social and economic disadvantages, the access to higher education remains a distant dream for a large mass.

In 2014, 350,000 students from Grade 1 to 10 dropped out from Nepal's school system, while about sixty percent Grade 10 students fail in School Leaving Certificate (SLC) national examination annually. Majority of those without high schools certificates or skills training have poor prospect for employment in the country. Consequently, youth, especially from rural areas, are fleeing to foreign countries to take menial jobs in a hope to change their fortunes. A way to provide them higher education and skills for their employment and better life can be through open and distance learning with flexible access policy.

Nepal is currently establishing Open University of Nepal (OUN) as a national university of open and distance learning to enhance the access to higher education for the masses. It took sustained efforts of Nepali diaspora for OUN to become a priority agenda of the government, which remained dormant for two decades. Diaspora scholars took this situation as a cause worth contributing. Consequently, they set the vision, mission and roadmap for the establishment of a unique, modern, high quality, relevant, equitable and readily accessible institution of higher learning for all people. The original Nepali diaspora proponents of OUN set the following objectives for embarking the initiative (Dhakal et. al., 2010):

1. To close the gap in higher education demand, currently unmet by the combined capacity of existing institutions;
2. To take tertiary education to the rural, remote, and marginalized people, including women and Dalits who are practically confined to the villages due to family obligations and social-economic challenges;
3. To provide opportunities for teachers, government employees and private sector employees who are unable to advance their education, skills and careers in existing system;
4. To provide a mechanism to continue education for the youth who take employment in foreign countries; and
5. To advance a computer-based education in rural Nepal that relates to health, social systems, productivity, economic improvement, and sustainability disciplines.

The active involvement of Nepali diaspora in establishing OUN is in itself a new paradigm shift in the higher education system of the country, and perhaps a novel initiative among global diaspora population. Considering special geographic, demographic and socio-economic context of Nepal, this work is one of special significance (Dhakal, 2011). The Nepali diaspora hold a key stake in the initiative and are now working closely with Ministry of Education (MoE), Government of Nepal (GoN). This case-study paper presents historical development of these diaspora efforts on OUN initiative.

Methodology

This case-study was carried out through an environmental scan of the documentary evidence related to the sequence of events from the time when Nepali diaspora undertook the inception of the idea for an inclusive higher education access in Nepal to the recent developments that have taken place.

Results and Discussion

The Barriers of Access to Higher Education

There are geographic, demographic and socio-economic barriers that limit access to higher education in Nepal. The major barriers are presented below.

(a) 'Highs' and 'Lows' in the Society

Nepal has a highly stratified society, originating from traditional structures of 'highs' and 'lows' (Rasali, 2012). Furthermore, geography of high Himalayas, middle mountains and low Terai plains divides the country into clear zones of accessibility, and there is a divide between rural and urban population in human development. Consequently, there is a widening income gap across population groups, and a knowledge gap resulting from the divide in access between those who afford private

education and those who do not. In a country where more than 80% people still live in rural areas, the limitations faced by rural people translates into majority people being in multidimensional disadvantage.

Learned people have been highly placed in the social strata from time immemorial. However, with the rise of knowledge economy, increasing sophistication of all vocations, and rapid diversification of professions, education in the 21st century has become not only the essential tool of emancipation but also of attaining survival skills and knowledge. Despite bearing powerful liberating values, access to education and learning in Nepal have never been universal in its true sense. As time is progressing, education is turning into a privilege to be purchased in the free market as per one's purchasing power. Consequently, quality education, or even rudimentary education, has become the right to a small segment of the population, including those who enjoyed privileges through traditional roots. More acutely suffering from these uneven systemic arrangements are Dalit and disadvantaged children, who nearly entirely fail to even gain secondary-level education. Khanal (2015) reports that Dalit children's inclusion in education is affected by a range of interconnected school and community factors. These factors could readily serve as barriers to their access to higher education.

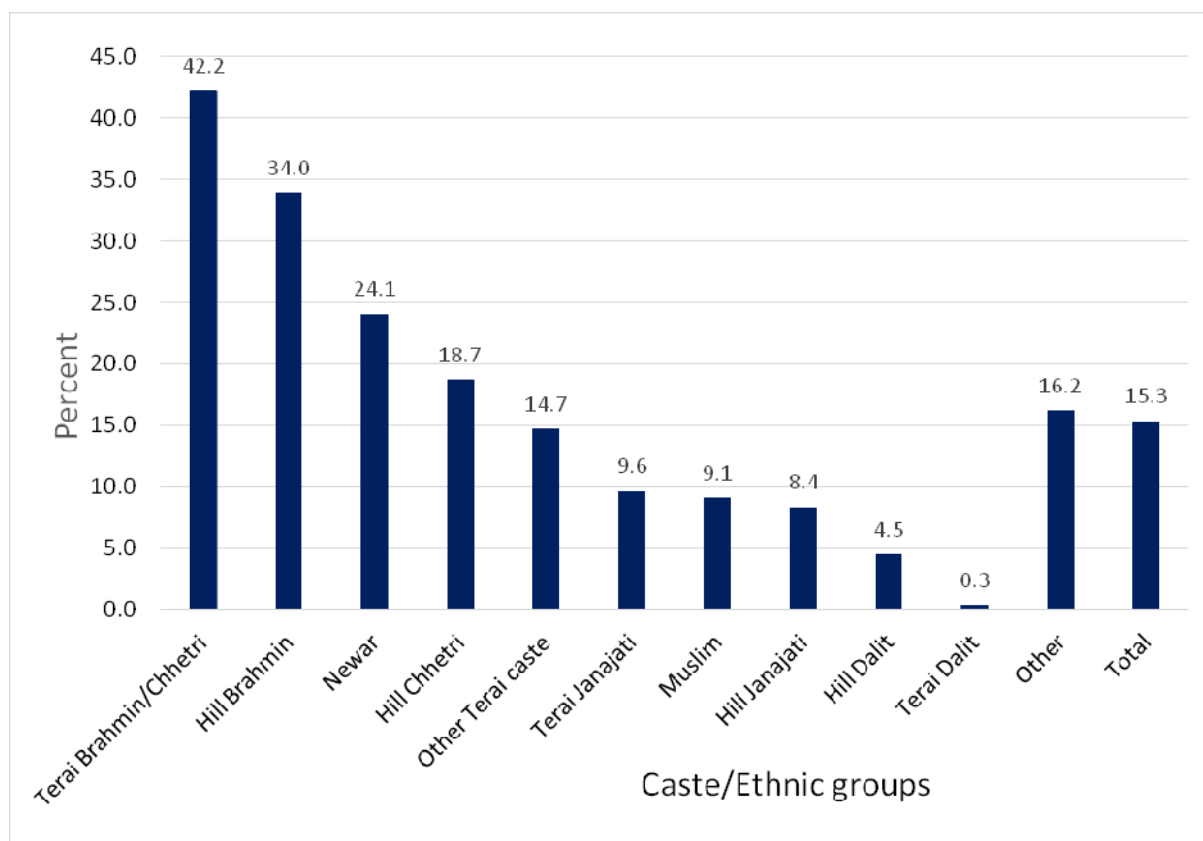


Figure 1: Percentage of male population (15-59) attaining higher education in Nepal, by Caste/Ethnic groups, NDHS 2011

There exists a gradient of disparity across caste/ethnic groups in Nepal. Figure 1 shows higher education attainment data among age 15-59 males from various caste and ethnic groups from Nepal Demographic and Health Survey (NDHS) 2011. It may be noted that higher education attainment among female population would be worse. Rasali (2015) reported that Hill Brahmin had higher education attainment as high as up to 24 times more than Hill Dalit, and up to 8 times more than Hill Janajati in specific geographic sub-regions of the country. These data clearly indicates a problem of a systemic nature with the variation in higher education attainment across caste-groups and geographic sub-regions being intolerably high.

(b) The Iron Gate to Higher Education

In 1990, Nepal Government took a decision to commercialize the entire education sector from kindergarten to university level. Since then, a new form of stratification was born in education. Now money rather than the talent of a child could buy the quality education. This move also resulted in deterioration of public school education, which has been condemned to be left for the urban-poor, rural majority and entirety of remote population. The result has been that most disadvantaged students, especially those from public schools in rural and remote areas, do not get the opportunity to graduate from high schools. The overall passing rate of Grade 10 students on national School Leaving Certificate (SLC) examination, which is often called the Iron Gate to Higher Education, has been less than 50% every year (Lamsal, 2013). There is a huge accumulation of school dropouts and students failing in SLC, who have no opportunity to experience higher education. As they are living mostly in the rural and remote areas of the country, employment opportunities for them are extremely hard to come by. As a result, in the past decade, when the country liberalized foreign travel, there has been an influx of Nepali youth from rural areas to foreign countries working as unskilled labourers. Majority of these youth are without high schools education or skills training on employable vocations. The vast majority of them are employed in low paying and dangerous jobs. Of the four million Nepali youth who work abroad, three dead bodies arrive in Tribhuvan International Airport every day, and an uncountable number return with physical and psychological illness and injuries.

In contemporary Nepal, three categories of the people seem to have general access to higher education: 1) the students from urban areas, 2) those born to relatively resource-rich parents, and 3) those who can reach the colleges through their own academic excellence or earning meritorious scholarships (Rasali, 2012). This leaves the vast majority of the country's population without access to post-secondary education. Most acutely suffering from this systemic disadvantage are the marginalized population groups such as women, Dalits and people of remote areas. Consequently, it has become urgent to find not only an efficient, economical and sustainable solution to the problem but also an effective, fair and liberating one.

Mass Education, OUN and Nepali Diaspora

The conventional problem of providing equitable opportunity of higher learning and skills that lead to employment, entrepreneurship, and dignified standing in the society, to the masses of people, including the disadvantaged, could not be solved by the conventionally employed system. However, considering that overwhelming majority population currently deprived of educational opportunities is economically poor, geographically rural or remote, employed in foreign countries, or in need of earning while learning, open and distance education is the most desirable way for providing education and skill training. It is with this realization that the Nepali diaspora took a decision to contribute through OUN with knowledge, skills and philanthropic contributions for the cause of mass education in Nepal.

Nepali diaspora took the initiative to establish OUN in 2009 after years of studies, brainstorming, fact-finding and planning. The diaspora mass is poised to make intellectual and financial contributions towards establishment and operation of the stated university through the network of their global organization, Non-Resident Nepali Association (NRNA). The NRNA's Task Force for OUN has been spearheading the work with an aim to tap on the vast academic human resource of Nepali diaspora. NRNA President Shesh Ghale's recent public commitment for raising necessary funds from among diaspora and international sources indicates the importance of Nepali diaspora's crucial role.

Sustained efforts since 2009 for the establishment of Open University led to tabling of a bill in the Legislature Parliament of Nepal in January 2011, but Nepal's parliament was dissolved in May 2012 as and when the bill had reached the voting stage. Despite that, and similar other setbacks, the effort continued. This led to tabling the Open University of Nepal Bill at the Legislature Parliament on July 31, 2015. This has again fueled the hope for all disadvantaged and marginalized Nepali adults towards access to higher education.

Among others, the people who can directly benefit from the OUN come under one or more of the following major categories: 1) women who are forced to remain housewives; 2) the people who are living in rural and remote areas of Nepal; 3) the people who are from traditionally disadvantaged ethnic groups, especially as Dalits and other disadvantaged communities; 4) the people who are working in foreign lands without any higher education attainment; 5) the people who had experienced hardship in their previous higher education; 6) the people who are in need to change or advance their careers; 7) the people who are in need to pursue learning while earning their living; and 8) the people who are in need to adopt new vocations without need to leave their communities. Satisfying such a need for access, quality, diversity, choice and economy on education and training to the stated target population is, therefore, a monumental challenge.

The special arrangement for mobilizing thousands of diaspora academics, scientists and skilled professionals to fulfill the need of human resource for Open University of Nepal is a novel initiative taken by Nepali diaspora (Dhakal, 2011). There are more than a thousand Nepalese academics who are faculty members of universities around the world, who can contribute directly as the faculty members of the OUN. Even more numerous are successful scientists, professionals, skilled workers and business entrepreneurs.

The trend at the moment in Nepal is such that most youth who score distinctions in their Grade 12, Bachelor's or Master's Degree examinations go to industrialized countries for further studies. And, nearly all of them settle there. Considering that more Ph.D. degree holders of Nepali origin are already abroad than in Nepal, we can imagine simply that overwhelming majority of Nepali Ph.D. scholars will be abroad within 10 years.

Today, Nepali diaspora is largely composed of first generation immigrants carrying great affinity for Nepal and intrinsic motivation to do good for the society they left behind. Many who have come to latter part of their career cycle are seeking institutionalized avenues for making intellectual and skill contribution as well as financial contribution to Nepal. Such a mass is only increasing rapidly. Therefore, Nepali diaspora members are poised to play an instrumental role in establishing and operating OUN system.

History of Diaspora Engagement in Open University of Nepal

(a) From Initiation of Idea to Action Group Formation

The idea of having an Open University was not new to Nepal. Time and again, the government of Nepal has shown policy directions and started allocating funds to explore the feasibility for establishing Open University in the country (Dhakal et. al., 2010). However, overwhelming consideration was given to expanding the higher education access generally in the country rather than as a potent solution for educating masses of disadvantaged sub-populations. Past efforts also did not particularly pay significant focus on how it can be operationalized to benefit the disadvantaged population groups. It was in 2009 over a serious conversation that the first two authors of this case-study who on behalf of Canada Foundation for Nepal (CFFN) undertook a task to address the issue of access-gap and inequity in Nepal's higher education specifically, systemically, and institutionally through Open University of Nepal (OUN) propelled by diaspora skills, knowledge, innovations and resources.

A ground-breaking decision of Non-Resident Nepali Association-International Coordinating Council (NRNA-ICC) during its Regional Conference, Houston, USA to undertake OUN as its flagship project and the release of a background paper by Dhakal et. al. (2010) laid the foundation for the initiative for a global vision of higher education in Nepal. A group of diaspora then carried the initiative forward, with a dedicated leadership of Dr. Pramod Dhakal. A large number of well-recognised Nepali faculty academics from many universities around the world rallied behind him throughout these years. To that effect, the GoN also responded positively to the call of NRNA-ICC for OUN initiative. The major team formation efforts have been as follows:

1. Concept precursors: CFFN AGM (May 10, 2008), NRN Canada Conference (June 27, 2009), NRNA Global Conference Kathmandu (October 14, 2009)
2. First Task Force, comprised of CFFN and NRNA Regional Representatives for North Americas (December 2009)-Initial Proponents (P. Dhakal, A. Adhikari, D. Rasali)
3. First NRNA Technical Team (February 2010) – Proponents (P. Dhakal, A. Adhikari, D. Rasali, R. Adhikari)
4. OUN Strategic Committee (May 2010)- Proponents and other stakeholders (P. Dhakal, Chair)
5. First NRNA SKI Task Force (post May 2010)- Proponents and other stakeholders (R. Adhikari, Coordinator)
6. Open University of Nepal Steering Committee (October 2010) – diaspora proponents and government representatives (Secretary of MoE, Chair, NRNA President Co-Chair, P.Dhakal, Member-Secretary and full-time office bearer)
7. Strategic Planning Team, Functional Teams, and Working Groups of academics and professionals (January 2011) (P.Dhakal, Coordinator)
8. NRNA OUN Task Force, (December 2013) (P. Dhakal, Chair)

Workshops and Meetings

Since the inception of the idea of Nepali diaspora's role in 2009, the following sequence of milestone events were spearheaded by Nepali diaspora leadership for the OUN:

1. NRN Delegation to Athabasca University, Canada, December 4, 2009
2. SKI Workshop, Melbourne, Australia, February 10, 2010
3. OUN Workshop at NRNA Regional Conference, Houston, USA, May 28, 2010
4. 1st OUN Planning Meeting, Ottawa, August 9, 2010
5. 2nd OUN Planning Meeting at NRNA Regional Conference, Sydney, Australia, October 7, 2010
6. Signing of Joint Resolution and Interaction between NRNA and MoE, Kathmandu, October 7, 2014
7. Meeting with Canadian representatives on Joint Resolution, Kathmandu, October 8, 2010
8. 3rd OUN Planning Meeting Ottawa, Canada, January 7, 2011

9. Collaboration Meeting at University of Manitoba, Canada, March 4, 2011
10. 4th OUN Planning Meeting, Ottawa, Canada, August 1, 2011
11. OUN Workshop at the 5th NRNA Global Conference, Kathmandu, Nepal, October 11, 2011
12. 1st Workshop on pedagogical model for OUN, January 4, 2012
13. OUN interaction program with California State University, Kathmandu, April 4, 2012
14. NRN-Canada/CFFN Study Tours and Consultations at Athabasca University, May 18, 2012
15. Special Positioning of OUN and National Open Digital Library at National Library Conference in Nepal, December 29-30, 2012
16. Joint Organization and Paper Presentations at IT4D International Conference on eEducation and eHealth, Kathmandu, July 12, 2012
17. Meeting on OUN with Open Universities Australia (OUA), July 17, 2012
18. OUN Workshop on OUN, NRNA Regional Conference, Sydney, Australia, August 1, 2012
19. 2nd Workshop on Pedagogical Model for OUN, Kathmandu, January 04, 2013
20. OUN Workshop, 6th NRNA Global Conference, Kathmandu, October 18, 2013
21. Conference on National Development: Opportunities and challenges for the Diaspora, University of New Mexico, March 11, 2014
22. NRNA OUN Task Force/NRN-Canada/CFFN Open University of Nepal Planning Meeting, BCIT Burnaby Campus, British Columbia, Canada, Friday, August 8, 2014
23. Meeting on Positioning of NRNA Role in OUN with MoE, Kathmandu, October 24, 2014
24. Signing of MoU and Interaction between NRNA and MoE, Kathmandu, May 10, 2014
25. NRNA SKI Workshop on Sydney, Australia, July 19, 2014
26. Joint Meeting on OUN between OUUK, MoE, UGC and NRNA, Kathmandu, July 24, 2014
27. OUN Planning Workshop, NRN-Canada/CFFN, Vancouver, Canada, August 8, 2014
28. Collaboration Meeting: NRNA and California State University, California, August 13, 2014
29. Collaboration Meeting: Northern Alberta Institute of Technology, Canada, August 19, 2014
30. Collaboration Meeting with President of Athabasca University, Canada, August 21, 2014
31. Interactions with Nepalese Diaspora Communities in Canadian Cities, August 8-30, 2014
32. Collaboration Meeting with Commonwealth of Learning, Vancouver, Canada, September 3, 2014

33. Workshop on OUN Legislative Initiatives with MPs, NRN Day, Kathmandu, August 10, 2014
34. Theory of Change Workshop on OUN with OU-UK, Kathmandu, November 18, 2014
35. 3rd Workshop on Pedagogical Model for OUN, Kathmandu, January 28, 2015-08-27
36. Collaboration Dialogue between NRNA, MoE and OU-UK, February 3, 2015-08-27
37. Youth & Science Policy: A National Dialogue with SKI, NAST and NBFS, February 13, 2014
38. Interaction on OUN Bill between NRNA and Parliamentary Committee on Women, Children, Elderly and Social Welfare, August 6, 2015

Major Memoranda of Understandings and Documents

Since the inception of the idea of Nepali diaspora's role in 2009, several agreements were signed among various key stakeholders of OUN initiative. The following major documents, compiled in the OUN White Paper (Dhakal, 2014), form the bases of initial activities of the OUN to move forward on the steps of its formation:

1. MoU between AU and NRNA-ICC and CFFN, Ottawa, Canada, 25 September, 2010.
2. Resolution between MoE, GoN and NRNA, Kathmandu, Nepal, 7th October, 2010.
3. MoU between OUNIDB and AU, Sydney, Australia, 31 August, 2012.
4. MoU between OUNIDB and NRNA-ICC, Sydney, Australia, 31 August, 2012.
5. Report on the Meeting between NRNA-ICC and MoE, Kathmandu, 24 November, 2013.
6. MoU between NRNA and Ministry of Education on Establishment and Operation of Open University, Kathmandu, May 10, 2014.
7. Official Adoption of "A White Paper on Open University of Nepal", OUNIDB, June 18, 2014

Commitment from Government of Nepal

Ever since the diaspora engagement in OUN initiative, the representatives of the GoN have been playing a positive role in supporting the initiative. Ambassadors of Nepal to Canada Dr. Bhojraj Pokhrel and Ambassador of Nepal to the USA Dr. Shankar Sharma attended several conferences, meetings and workshop in support of the initiative and taken the matter to the GoN. This has led to the MoE responding positively. In 2010, Minister Sarvendra Nath Sukla took special interest to work with NRNA collaboratively in the initiative and jointly signed a ground-breaking resolution along with the then NRNA President Devman Hirachan, and the MoE's high officials, especially former Secretaries Deependra Vikram Thapa, Janardan Nepal and Mahasharam Sharma enthusiastically followed up. Support of many ministers, members of parliament and government officials played instrumental role in adopting the proposition of the NRNA and diaspora representative in Nepal, Dr. Pramod Dhakal. Though there have been many ups and downs of the level of support to the Nepali diaspora initiative by the government, the perseverance of promoters within the diaspora, government and the public has paid off in the end. This has finally culminated into tabling of a bill for the OUN in Legislature Parliament of Nepal. However, there needs to be greater trust among the lawmakers, policymakers, and decision-makers of Nepal towards institutionally sustained engagement of Nepali diaspora in the educational advancement of the masses. Proper legal and institutional framework will be instrumental in utilizing the full benefit of diaspora human capital to the benefit of Nepali people.

Conclusions

Nepali diaspora have committed their efforts with a vision to establish an institutionalized system for inclusive access to higher education to benefit the Nepalese learners both within the country and abroad. These efforts are examples of unconditional commitment of highly qualified and internationally recognized Nepali academics to provide leadership and support to higher education system in Nepal. Capitalizing this commitment, bestowing leadership, responsibility, and accountability, to Nepali diaspora on OUN is a befitting approach for Nepal to make the OUN sustainable and successful. This carries a global vision of higher education focussing on its access to the masses, with institutional focus for bringing the disadvantaged segment of the population to the mainstream of educational achievements and for prosperity of Nepal.

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MOOCHING OFF MOOCS? USER INSIGHTS AND REFLECTIONS

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Abstract

Recent developments in the field of Open and Distance Education resulted in Massive Open Online Courses (MOOCs) that provide opportunities for those who prefer to learn in an online environment using freely accessible resources. This paper aims to report the findings of a study which investigated the awareness of MOOCs among students and staff at a university in Sri Lanka. It also reveals the practices and reflections of those who have experience in using MOOCs. The sample consisted of 300 informants out of which 30 were academics and the others were undergraduate and postgraduate students. Data were collected using open-ended questionnaires and semi-structured interviews. The study revealed that the majority of the sample were unaware of the existence of MOOCs and it showed that MOOC participants' choice of courses and completion of courses were influenced by a wide variety of factors. The study also found that practices used by MOOC participants and their expectations of MOOCs differed across the sample.

Keywords: *Massive Open Online Courses (MOOCs); online learning; learner practices and reflections*

Introduction

The number of Massive Open Online Courses (MOOCs) is on the increase and many high-ranking universities in the world offer courses on this newly discovered teaching and learning platform. It is an opportunity for anyone anywhere in the world to study a course online with no or minimal cost, irrespective of their age or prior qualifications. However, research shows that even though the number of people enrolling these MOOCs has increased, there is a high dropout or non-completion rate (Koutropoulos, et al., 2012). According to Kop, Fournier and Mak (2011), if learners are to get the benefits of the new technology and the vast network of resources they are exposed to, “a high level of competency and interest in using a vast array of tools is required” (p.1) and as Fournier, Kop and Durand (2014) point out, a variety of factors affect motivation to follow an online course and they emphasise the need to carry out ‘in-depth analyses of types of learners and their activity levels which would inform the research on informal learning, personalization and collaboration’ (p.13).

Rationale for the Study

Open and Distance learning is becoming popular in the modern world since students now want to learn while they are engaged in their employment or other day to day activities. Even though there are many opportunities for Open and Distance learning, not many people around the world are aware of or focus their attention on these. The Open University of Sri Lanka (OUSL) is the pioneer distance education institution in Sri Lanka which has a large student population of about 35000 and catering to the needs of this diverse population is a challenge faced by the university. Massive Open Online Courses (MOOCs) provide a new mode of open and distance learning and the proponents of these online courses see them as a solution to some issues in higher education such as limited access to high-quality resources and high costs of offering courses (Koller, Ng, Do & Cheng, 2013). However, in a study by Liyanagunawardena, Williams and Adams (2013) which reviewed the enrollment in MOOCs from different countries point out that most of the participants were from North America and Europe and there were only a few participants from Asia and Africa with very few from South East Asia and they attribute it to the “possible barriers of access to online learning that can be presumed in those parts of the world, both technological and linguistic” (p. 17). Hence, it would be useful to carry

out a study to investigate the factors affecting the use/non-use of MOOCs by academics and students in a Distance Education institution in Sri Lanka and the views of those who have followed MOOCs. Furthermore, most of the studies on MOOCs focus on the participants on a particular course or platform and their behavior is studied online by MOOC designers whereas the present study collected data on MOOC users via questionnaires and face to face in-depth interviews which enabled the researcher to uncover the participants' practices and experiences in detail.

Review of Related Literature

The focus of this study was mainly to investigate the factors affecting participation, non-participation and drop-out of MOOCs and therefore, the review given below is limited to studies relevant to the area of the present study.

Learner Intent

Koller, Ng, Do and Chen (2013) point out that learner retention in MOOCs cannot be compared with retention in other traditional university courses and they argue that low retention in MOOCs can be considered reasonable in the context of learner intent since those who choose to enroll are from diverse backgrounds with varied motivations. They show that there is a significant variation in the retention rates according to the type of course the participants enrolled in and also on their wish to obtain a certificate with official credentials by paying for it. Koller, Ng, Do and Chen (ibid), view MOOCs as “an opportunity for risk-free exploration” (p.7) as well where students can have a taste of different courses on different topics and attempt courses at different levels enabling them to choose the course which matches their skills and interests and which is at the right level.

Similar view on learner engagement in MOOCs is expressed by Kizilcec, Piech and Schneider (2013) and they present a classification method to identify trajectories of learner engagement. Their study which included three computer courses, classified learner engagement into four prototypical trajectories, namely, Completing (attempted majority of assignments), Auditing (did assignments infrequently), Disengaging (did assignments at the beginning and then showed a decrease in engagement), and Sampling (watched one or two videos or briefly explored the material). They claim that the latter three trajectories may be considered as non-completion in a traditional monolithic classroom. Kizilec, Piech and Schneider (ibid) thus stress that given the powerful promise of MOOCs to provide global access to high-quality education future designers need to pay attention to both types of learners i.e. learners who wish to follow a “standard assessment-centric” course and those who have “less-structured motivations” (p.9).

Learning Experiences

MOOC participants may face a wide variety of challenges when learning online and factors which would affect their access to a quality learning experience is discussed on the basis of connectivist theories by some researchers (Kop, 2011; Kop, Fournier & Mak, 2011). They stress the importance of making connections among all ‘actors’ in a MOOC in order to facilitate meaningful learning outcomes. Kop, Fournier and Mak (2011) found that the more experienced the learner is in “networked learning and using MOOCs, the higher the level of participation” (p.19). They emphasise that the “significant role of the knowledgeable others or other learners is to share part or all of the roles of the facilitator and support other learners by taking an active, participative, and critical role in connectivist learning by communicating, sharing, cooperating, and collaborating with and providing feedback to each other in the communities or networks” (p.19). The influence of other participants' activities such as postings on discussion forums as a motivating factor for MOOC participation is also seen in a study by Fournier, Kop and Durand (2014). Miller (2015) tried out an Online Pedagogy MOOC which facilitated a lot of interaction and collaboration found that ‘collaboration with peers’ and ‘interactivity’ were the themes which had the highest references in his end-of course survey.

According to Miller (2015), a strong value in online learning is the ability to collaborate and form a learning community with peers, though it is not easily achieved.

The Present Study

The present study attempted to investigate the awareness of MOOCs, the factors affecting choice of MOOCs and participants' views, and reflections of their MOOC learning experience. The Case Study was conducted at the Open University of Sri Lanka. The sample consisted of 270 undergraduates and 30 academic staff members and it can be considered a purposive sample. The informants were used to survey the awareness of MOOCs and use of MOOCs initially and those who have experience in following a MOOC were selected as the cases for intensive study. "A case study is done to shed light on a phenomenon, which is the processes, events, persons, or things of interest to the researcher" Gall, Borg and Gall (1996, p. 545). Thus, the sub-sample for in-depth study consisted of 12 participants including 5 senior academics, 3 junior academics, 2 postgraduate students and 2 undergraduate students.

The study used an open-ended questionnaire and a follow-up interview to collect data. The data were analyzed qualitatively.

Research questions:

What are the factors that affect participants' choice of MOOCs and their completion of MOOCs?

What insights do participants have on MOOC learning experience?

Findings

Out of the 270 students and 30 staff members, only a few showed an awareness of MOOCs and the majority (178) were unaware of the existence of MOOCs. The sub-sample consisted of people who had followed at least one MOOC (16) and their MOOCing experience is discussed below.

Choice of MOOCs

The participants mentioned a number of factors which affect their choice of MOOCs. The main factors mentioned were the relevance to their subject discipline and the duration of the course. The majority of the sample did not like to follow a course which goes beyond six weeks. The workload, duration of video segments, ability to save course content for later use, assessment techniques and the prestige of the university which offers the course were also mentioned as factors which influence their choice of a MOOC. Some participants said that their choice of a course depends on how appealing and informative the initial introduction to the course is and they tend to register for the MOOCs which provide a detailed description of the course outcomes. There were participants who selected courses on the recommendations of their friends or lecturers.

Objectives of following a MOOC

The participants were asked to describe why they follow MOOCs and their objectives could be grouped into three main categories: Educational, Professional and Psycho-Social.

Educational Objectives include access to new knowledge, opportunity to discuss about new inventions, clarify doubts, share resources, access to a wide variety of material otherwise impossible, update existing knowledge, and learn areas which they never thought they would be able to learn. MOOCs give an opportunity to get a taste of all possible disciplines and for some students it is an

opportunity to identify their strengths and weaknesses and decide on their future subject specializations and research work in universities.

Professional Objectives were mainly related to pedagogical purposes since the sample consisted of academics who are actively engaged in teaching. The objectives they mentioned were a) to have access to a wide variety of material and resources, b) to learn strategies for teaching an assessing large numbers, c) to gain ideas for creating audio visual material, d) to identify ways of giving feedback, and e) mainly to get ideas about planning online courses. A young undergraduate in ICT said that her objective of following MOOCs was to gain new knowledge from specialists in the field at no additional cost which she believed would enhance her career prospects.

Some participants followed MOOCs merely for Social and Psychological purposes. They see MOOCs as a good opportunity for networking and finding new friends and overcoming loneliness and boredom. It has become a pastime for some as participating in MOOCs break monotony in their lives and as it provides self-satisfaction, a sense of achievement and fun.

Participation and Completion

Out of the sixteen participants who followed MOOCs, only six participants had followed more than one MOOC and there was one participant who had enrolled for fifteen MOOCs. This participant had the experience in following five to six courses simultaneously. However, the majority preferred to enroll for one course at a given time. MOOC completion was not the aim of most of the participants and only two participants had completed a MOOC and obtained certificates of completion.

MOOC Learning Experience

MOOC learning was seen as a rewarding experience by some participants and it was described as “wonderful and fascinating”. A participant describing her MOOC experience said, “I feel like I’m an internal student sitting in a lecture hall of a world class university. It’s a university I dreamt to be in and I’ve fulfilled that dream to some extent”. One informant described MOOCs as a rich source of information which gives access to cutting-edge theorizing in a particular field of study (Senior Academic). Furthermore, some participants see MOOCs as a source which provides access to an enormous content of quality input from subject experts. MOOCs also enable building new relationships among people all over the world. “The most liked thing about MOOCs is being able to make new friends, help each other, and to improve our knowledge at the same time. And also to experience learning from different universities throughout the world.” (An undergraduate)

Another participant said she liked it because there are no barriers to learn a subject or topic one is interested in. However, this participant feels that more learner support is necessary because it is ‘mostly one way flow’ and feedback is mandatory if successful learning is to take place (Junior academic).

MOOCs are seen as a means to spend their leisure time meaningfully by some of the participants and according to one participant, following MOOCs is her pastime now. “I follow courses not only related to my subject discipline but also general courses like cookery, health and music. You may have never got an opportunity to learn these if not for MOOCs”(Senior Academic).

However, not all the participants were positive about their MOOC learning experience. As one participant claimed “My experience of MOOCs is that they lack reality or depth because I never met my classmates. Our friendships withered away one week after the course ended.” Commenting on the assessments in MOOCs, he further said “the assessments were short, may be because the lecturers can read them fast, and the marking was lenient and I did not feel good about it. Some students had issues with technology and they couldn’t do it proper.”(Postgraduate Student). Another participant also showed her dissatisfaction about the inability to watch some videos on her iPad. Another one showed

her concern about technical errors which can occur when submitting assignments and the impact it would have on her course evaluation (Junior Academic).

Another drawback pointed out by most of the participants was unrealistic time frames. “The calculation of time required to complete a task is not right. You need much more time to complete a task and as a result you feel like giving up as you cannot cope with the pace”. (Undergraduate)

Some participants commented on the quality of the course content as well. Those who are subject experts felt that the course content lacks depth and only a surface level knowledge is provided in some disciplines. Some are of the opinion that the courses are not updated and the same course is delivered without any revisions year after year.

Strategies Used

The informants also showed a variety of strategy use when following a MOOC. Many informants said that they are not interested in completing a MOOC and obtaining a statement of accomplishment. Hence, they download the material while the course is in progress and keep those for future use. Most of them do not watch the videos as it is time consuming and some participants are unable to watch those as they do not have a good internet connection. They are satisfied with reading the transcript and they are grateful to the educators for providing a transcript. Some are in the practice of doing the quizzes only and “it’s sometimes guesswork”. One participant revealed that she is a lurker and she neither introduced herself at the beginning nor made contributions to the discussion forum. Another participant waited until the last week of the course and spent one or two days on doing the assignments he thought are worth attempting. Most of the participants were found to be either ‘auditing’ or ‘sampling’ (Kizilcec, Piech and Schneider, 2013).

Views and Suggestions

Most of the participants were of the view that MOOCs are democratic in making knowledge accessible to anyone, anywhere in the world and they should continue to make them available free of charge. Some were of the view that certificates should be given free. Many were of the feeling that in order to complete a MOOC, a learner has to have determination, persistence and endurance and facilitator feedback is essential if learner motivation is to be maintained throughout the course. One informant, a junior academic, was of the view that word ‘massive’ has connotations of large tuition classes and it indirectly shows that “education could be poured into a large number of minds from a single location” and while agreeing on the benefits of online learning this participant believes that “human presence and contact” is essential in in-depth learning of a subject. This view shows the importance of enhancing peer collaboration and forming learning communities in online learning (Miller, 2015). Another suggestion from a postgraduate student was to design courses of varying levels to suit the needs of learners with different educational and professional qualifications. These learners believe that they will benefit more from a MOOC if there is continuity of that particular course at a higher level.

Conclusion

As discussed above, the study found that awareness of Massive Open Online Courses among Open University students in Sri Lanka remains low at present. Those who follow MOOCs do it for different purposes and their practices vary widely across the sample. The study revealed that completion of a MOOC and obtaining a certificate was not the main purpose of following a MOOC for most of the participants and they used a variety of strategies in order to get the benefits of a MOOC amidst their busy schedules. The basis for selection of MOOCs was mainly the relevance of the subject discipline and duration of the course. Moreover, flexibility in assessment processes, novelty and creativity of course design, uniqueness of course content and feedback from course instructors were also mentioned as factors affecting choice of courses by MOOC users. Since some informants commented

on the level of the courses that are offered as MOOCs, courses which offer knowledge beyond basic concepts are necessary to attract learners of postgraduate level. Even though the original concept of Massive Open Online Courses may not agree with it, restrictions in enrolment for a course at a particular cycle and offering a course in several cycles would facilitate more instructor feedback, peer collaboration and more learner engagement than at present. The study also reveals that many learners lack self-direction and autonomy in learning and hence it is necessary to enhance MOOC users' metacognitive strategy use through appropriate activities prior to a course. The study is exploratory in nature and it has implications for MOOC design and delivery. Future studies may focus on individual differences in MOOC participation in detail and compare learning practices of MOOC users in different contexts.

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PROMOTING ENTREPRENEURSHIP EDUCATION THROUGH OPEN AND DISTANCE LEARNING (ODL) IN MALAYSIA: A CASE STUDY OF WAWASAN OPEN UNIVERSITY (WOU) STUDENTS AT PENANG REGIONAL CENTRE (PGRC)

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Abstract

This paper examines the role of Wawasan Open University (WOU) as an Open and Distance Learning (ODL) institution in promoting entrepreneurship education. This study will largely be a qualitative method which will use an open ended questionnaire and the data collected will be analysed thematically. Open ended questionnaires will be administered to 60 students from the WOU, Penang Regional Centre using the purposive sampling techniques. The study will employ a convenient sampling technique. An equal representation of participants from each school will be recognised. The sample comprised of the ODL students of WOU at Penang Regional Centre namely from; Business School (School of Business Administration) and other schools (School of Science and Technology, School of Foundation and Liberal Studies and School of Education, Languages and Communications). Students will be asked to respond to the questionnaire that will be placed at the reception of the Penang Regional Centre between March and June 2015. The target students in this study are those who had registered for a semester and have enrolled for the Entrepreneurship Development course with Penang Regional Centre. This is to ensure that the respondents are conversant in some way with the ODL system and also have the basic knowledge on entrepreneurship curriculum.

Keywords: *Entrepreneurship, Open and Distance Education, Entrepreneurship Education*

Introduction

The growing of entrepreneurship education in Malaysia since the mid 1990s is the result of the emergence of the new economy where knowledge has become a major resource in almost all economic activities. The importance of entrepreneurship to the growth of Malaysia's economy is substantiated by the amount and variety of supporting mechanisms and policies that exist for entrepreneurs, including funding, business advisory services and physical infrastructure facilities. On top of that, Malaysian government has also taken steps to encourage graduates to engage in entrepreneurship as stated in the "Knowledge Economy Master Plan" in 2000. In addition to this, Malaysian government has also revised its education and training component on to spur economy through entrepreneurship activities. This has made entrepreneurship education an essential component to cultivate potential entrepreneurs in both public and private higher learning institutions. As such, entrepreneurship education is considered to be the most effective way to promote the transition of graduates towards self employment.

Open and Distance Learning (ODL) in Malaysia upholds the lifelong learning banner. ODL's flexibility teaching and learning pedagogy attracts adult learners who have family and career commitment to manage in their daily life. The adult learners have vast skills and hands on working experience making them a good target group to initiate the intentions to start up their own business. Hence, the Wawasan Open University as an ODL institution plays the crucial role in promoting entrepreneurship education. The best way to address this challenge is to develop curriculum which include Entrepreneurship Education (EE). Realising the critical importance of EE, WOU as an ODL institution has developed the curriculum of Entrepreneurship Development course that is able to cut across schools/faculties to equip every WOU student with entrepreneurial skills. Students from across the schools/faculties in WOU are given a chance to study entrepreneurship by signing up for Entrepreneurship Development course which is offered as one of the university course.

Objective of the Study

The main objective of this study is to examine the role of WOU as an ODL institution in promoting EE in the Higher Education (HE) landscape based on the objective of unemployment reduction and promoting patriotism among university graduates. Higher Education is mandated to promote education for sustainability; its role in the contemporary education platform can be viewed by preparing university graduates to become productive workers, intelligent consumers, effective and patriotic citizens.

Research Questions

The reach was guided by the following research questions:

- What are the views of students in the School of Business and Administration at the Wawasan Open University about promoting of entrepreneurship?
- What are the perceptions of students from other schools on the promotion of entrepreneurship in the Wawasan Open University?
- How can the Higher Education promote the entrepreneurship culture in the curriculum?

Significance of the Study

This study is significant as the research findings obtained are expected to contribute to the teaching and learning of entrepreneurship education. It will be able to provide the ability among students to navigate business issues in the real business world. Therefore, the designing of curriculum on entrepreneurship education should focus on creating students who are innovative and creative. The study will be helpful to all open and distance learning institutions in promoting entrepreneurial culture in designing their curriculum.

Literature Review

This section of the study reviews literature related to the promotion of entrepreneurship in the Higher Education giving particular attention to the role of the Open and Distance Learning institutions. Entrepreneurship was established in the 1700s and its meaning has evolved ever since (Alberti et al., 2004). In simple terms it is starting one's own business but economists believe it is more than that. Schumpeter (1911) defined an entrepreneur as a person who destroys the existing economic order to create and benefit the structure by introducing new products and services, or by creating new forms of organisation, or by exploiting new raw materials. It simply means that a traditional and established means of doing business are destroyed by creative and innovative ways of doing business. Drucker (1985) who regarded as one of the leading management thinker of the 21st century describes entrepreneurs as someone who searches new opportunities and responds to these by the exploitation of scarce resources. Though the definitions that constitute an entrepreneur is someone who has a unique instinct, mind set, inspiration or vision, strength, willingness and ability to conceptualise ideas and implement a business plan and who perceives changes as an opportunity to create value. Many countries believe that entrepreneurship is the main element for stimulating economic growth and development hence leading to increased employment opportunities (Ossai and Nwalado, 2012). When talking about stimulating economy we can't ignore the role played by the Higher Education as the creators of knowledge. It has been argued by Abdullah (2012) that entrepreneurship activity is associated with generation and founding of new firms which become the engine for the growth and innovation of the economy during the times of economic challenges.

Therefore, education is a vital component of economy prosperity especially in developing countries that are characterised by low income and high unemployment level (Ndibe et al., 2013). Malaysian government came up with “Knowledge based Economy Master Plan”, it was designed as a platform to sustain rapid rate of economic growth and enhance international competitiveness so as to achieve the objectives of Vision 2020. It will also strengthen Malaysia’s capability to innovate; adapt and create indigenous technology; and design, develop and market new products, thereby providing the foundation for endogenously-driven growth. The development and the achievement of this objective have nothing short of amazing when it comes to the role of Open and Distance Education. In order to support this objective there is a need to raise the education quality that is offered by the higher education sector. Although the concept of entrepreneurship can be traced to the olden days of Schumpeter, the thought is still at its infant stages in the universities in Malaysia. The rise in the number of entrepreneurship courses offered in the higher education is associated with the need to meet the demand for entrepreneurship in the country.

Entrepreneurship Education (EE) is a lifelong learning process starting from an early age as at elementary school and progressing through all levels of education (Odunaike and Amoda, 2013). The primary focus of EE is to be making the learners understand it for pursuit of entrepreneurial behaviour. EE is a type of training which will have its main objective of preparing people to enter into a career which advances efficient service delivery in the modern market to meet the dynamic demands of the consumers. Contemporary research in the field of entrepreneurship concur that there is need to emphasis entrepreneurship education (Dumbu and Chadamoyo, 2012). Traditionally the universities have dwelled on Business education which has a more limited scope and coverage than EE. EE is a lifelong learning process where competency awareness, creativity, application, start ups and growth depict the EE curve.

EE in the Higher Education is of critical importance and it should be the role of ODL institution that should be the leaders in developing university curriculum that cut across schools/faculties to equip every university student with entrepreneurial skills. The ODL delivery mode is one that is flexible and allows learners to learn while enjoying the comfort of their homes, workplace and even travel. In contemporary societies, universities are considered to be the knowledge factories and the longevity of a university is dependent on its knowledge production process. Therefore, Higher Education in the form of ODL should be adventurous in EE to stimulate entrepreneurial behaviour through curriculum innovation.

Aina and Salako (2008) described entrepreneurship as the wiliness and ability of an individual to seek out profitable investment opportunities. In the process of taking advantage of investment opportunities, scarce resources are employed (Ogundele et al., 2012). Reward in the form of profit is the major driver and incentive for entrepreneurship but this is always accompanied by financial, social and economic risks (Kikechi et al., 2013). Ogundele et al. (2012) argued that entrepreneurs should be innovative, change oriented and lastly be visionary.

Research Methodology

This section will address the methodology issue. This research was largely a qualitative descriptive survey that used an open ended questionnaire as an instrument to seek information from the students about what they perceived is the role of the ODL in promoting EE. Open ended questionnaire has the advantage over other data collection instruments in that it allows the respondents to respond to the items in their own words.

Therefore, this study is deeply rooted in the qualitative research paradigm. The study employed convenient sampling techniques to come up with the sample of 60 students. The sample comprised of the ODL students drawn from the four Schools of Wawasan Open University at Penang Regional Centre namely; School of Business Administration (SBA), School of Science and Technology (SST), School of Foundation and Liberal Studies (SFLS) and School of Education, Languages and Communications (SELC). An equal representation of the participants from each school was recognised and in each school, 15 students were given the opportunity to respond to the open ended questionnaire that was placed at the reception of Penang Regional Centre between March to June 2015. The target students in this study are those who had registered for a semester and have enrolled for the Entrepreneurship Development course with Penang Regional Centre. This ensured that the students were conversant in some way with ODL systems and the curriculum of Entrepreneurship Development course. Data collected through the use of open ended questionnaire were analysed through coding themes that emerged from the responses to the open ended items.

Results and Discussion

This study examined the promotion of entrepreneurship in Higher Education by Wawasan Open University (WOU). The students from four schools of the WOU provided several responses on the idea of promoting entrepreneurship in the university. In this study the university student's perceptions on the role of the ODL institutions in promoting entrepreneurship was examined critically in the following entrepreneurship education variable which are, the role of university to promote entrepreneurship, entrepreneurship curriculum and content, work experience and parental occupation as significant variables.

(i) Perception of the students from the School of Business and Administration (SBA) on WOU's role in promoting entrepreneurship.

The students in the SBA reviewed WOU as a university that has a vital role in propagating entrepreneurship education. They indicate that WOU is responsible for weaving the government policy on indigenisation and empowerment policies in the university curriculum. The students of other school are in similar opinion with students from SBA the WOU has the mandate to promote EE to rescue the Malaysia from the problems of unemployment. One of the students from SBA shared the following idea:

- WOU has bigger role to play in promoting the culture of entrepreneurship as being one of the leading ODL University that has the advantage of enrolling students from across industry with varying experience.

From the above opinion, one can argue that WOU has to shoulder the task of promoting EE to leverage the country on the economic challenges bedevilling it. There is no better solution to unemployment and poverty alleviation which is better than equipping graduates with EE. The general thinking of SBA students are that every graduating student from WOU should be equipped with entrepreneurship skills. These skills are necessary for new business start ups and improved management of the existing business. The current situation in the country is described by the rise in the number of the small business and micro business, have become the livelihoods of many families. As such, in order for the country to realise the benefits of these small firms WOU should do its part by promoting EE.

On the issue of EE being offered to other schools of the university, the SBA students expressed their opinion that EE should be taught across schools. The design of the curriculum would be such that the Entrepreneurship Development course should be offered to other schools in WOU as a compulsory university course. Supporting above view one of the respondents from SBA said:

- In line with the national agenda for the development of the national economy every university student should be in possession of the entrepreneurship skills that the challenges that are faced by the country are dealt with. The student further suggested that Entrepreneurship Development course should be made a compulsory course for all students instead of it only being offered as one of the university course.

A few more SBA students shared a different perception to the majority students and they had the following comments:

- Business education courses demand a lot of mathematical calculations and one should have good calculation inclination. Therefore, those students from other schools especially from schools of SLFS and SELC may not cop up with demanding mathematical courses, in the case Entrepreneurship Development. Then how can be taught entrepreneurship?

The above perception that can be concluded from the above opinion that the few individual students feel that EE should only be received by SBA and SST students who are required to have passed mathematics in O Levels or Sijil Pelajaran Malaysia (SPM). However the majority of the students believe that the course should be taught and learnt across the schools without any segregation.

From the perceptions indicated above one can conclude that WOU has an important role to play in the development of the economy. The role can be liberated through the review of the curriculum to meet the needs of the economy which is currently facing the challenges of high unemployment and poverty in both urban and rural population.

(ii) Perception of the students from other schools (SST, SFLS and SELC) on WOU's role in promoting entrepreneurship.

The majority of the respondents in the study stressed that WOU has a major role to play in promoting entrepreneurship in the country as one important mean to solve unemployment issue of the country. Some respondents shared the following opinion on this issue:

- In the birth of the new economic situation in our country where unemployment is marked as high, one should be equipped with some lifelong skills in business management and entrepreneurship.

From the above sentiment given out by the respondent in this study, one can conclude that there is high demand for EE in WOU. Students in the higher education environment, in this situation of high unemployment need to be equipped with the entrepreneurship skills. In WOU Entrepreneurship Development course is not made compulsory for all students across the university as such, a student may perceives it as a course which demands for mathematical knowledge may opt not to enrol for this course.

Another student from SELC provided a very interesting comment as follows:

- Entrepreneurship Development course in WOU is seen as the basic fundamental knowledge for entrepreneurship which teaches students to think and behave entrepreneurially.

This asserts that ODL students are seeing WOU as the veritable vehicle to drive the entrepreneurship education and hence lead to the development of an entrepreneurship based economy. This gives a clear message to WOU to position itself as a hub of entrepreneurship by making a substantial contribution in nurturing entrepreneurship environment for their students to benefit.

In general responses provided by the respondents in this study are that they do believe that WOU has a role to play in the enhancement of the EE in the country. The university is seen as the major stakeholder in the development of the entrepreneurship drive which should create and entrepreneurial culture across the faculties to influence students' decision to create new businesses.

Recommendations

Therefore, the study recommends that Entrepreneurship Development curriculum should cater for the needs of every student across schools in the university. It also suggests that Entrepreneurship Development course should be made compulsory and to be taught in all four schools in WOU. The respondents too suggested that WOU should stress its curriculum and the teaching of the Entrepreneurship Development course should focus on producing graduates who are innovative and creative. Therefore, the curriculum design should support employability skills such starting own business, presentation skills, creativity and leadership abilities.

The university should also cater for the development of the entrepreneurship culture and behaviour amongst all students. Therefore, the curriculum of the university should be refocused on the best ways to develop entrepreneurship consciousness in every students of the university. The best way to make this successful is to link the centre for Entrepreneurship Development with the university's alumni association. This would definitely help to improve the communication of the industry ideas to the university in terms of what is exactly happening in the business environment. Alumni association is responsible for the cross pollination of the business ideas as these are the people who are already into the business and industry. There is a valid reason for the collaboration of the university' centre for the Entrepreneurship Development and the alumni association is that, to stay relevance in the volatile world of emergence of new businesses and markets, academic programmes must focus on the real world tools of business and face reality in solving today's problem. It is also stressed that WOU should also think of providing short training programmes on entrepreneurship skills. The key role to play in the social competitive challenges is by offering high quality training that is appropriate to the current economic situation.

Conclusion

In view of the responses obtained from this study emphasised that WOU has a major role in promoting EE. The demand for entrepreneurship in the country can be divided into three main groups. Firstly, it is when the government which has recognises the need for the introduction of entrepreneurship concept in the higher education to advance its economical and social transformation goals. Entrepreneurial education aims at developing an entrepreneurial culture which would cultivate job creation. It is the demand made by government to deal with the challenges of unemployment and poverty reduction. Second stand is the demand for entrepreneurial education that is created by students. These are the group of students who are interested to venture in starting up their own business and also wish to obtain knowledge helpful in their careers. The last stand of the demand for entrepreneurship education is the business world itself. There seems to be a general scarcity of managerial skills in enterprises and of managers who are oriented to the development of new business to assure a continual renewal. Therefore, the role of the Higher Education sector is undeniable in satisfying the three folds of demand for entrepreneurship education leading to the promotion of entrepreneurship in Malaysia. WOU as one of the leading ODL higher education is mandated to promote education for sustainability, its role in the contemporary education platform is to prepare graduates to become productive workers, intelligent consumers, effective and patriotic citizens.

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USE OF OER AS COURSE MATERIALS AT WOU: WHAT WORKED, WHAT COULD HAVE BEEN DONE BETTER

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Abstract

This paper presents a study, aimed at analysing the implementation and use of OER at an open university for three different courses across three schools of study at WOU. All three courses, components of named degree programmes of the University, experimented with the use of OER as the core study materials. User data in the form of continuous and final assessment, measurement on learning outcome matrices, learner feedback and evaluation statistics as well as focus group data from faculty, tutors and other stakeholders were analysed to study the impact of OER use as course materials. The courses forming the subject of study were at different levels: one a masters level core course, the second a level 1 core course of the undergraduate programme in Business and the third a level 3 undergraduate course in Engineering and Technology, all with different sizes of user population. The study is thus able to present comparative scenarios within the same policy and infrastructural environment. All three courses have used OER as the core course content and have been on offer for 2/3 semesters. User feedback has been documented across semesters. Motivations for using OER, processes for promoting OER use and institutional capacity building are shared. Both primary and secondary data are presented to showcase the impact of OER use at the university in terms of cost efficiencies, time related efficiencies and effect on learning outcomes. Barriers to OER based development, coping mechanisms used and lessons learned are also shared to bring out the immense possibilities that OER use presents for higher education in general and open universities in particular.

Use of OER as Course Materials at WOU: The Study

OER which have been defined in a number of ways are “teaching, learning and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and repurposing by others” include full courses, course materials, modules, textbooks, streaming videos, tests, software and any other tools, materials or techniques used to support access to knowledge¹. Use of OER as course content has opened up exciting and promising alternative opportunities for higher education institutions and open universities in particular, to enable their learners to benefit from high quality, updated educational resources without needing to bear high costs.

While there has been a lot of academic discussion and great deal of excitement around open education resources among national policy-makers and OER champions in the country, OER use in Malaysian universities as a mainstreamed activity has not been very pronounced. Some universities have participated in the creation of OER and contributed to OER repositories. As per a survey conducted by the Ministry of Education in 2012, at least 5 public universities are members of OCW.² Instances of active use in teaching and learning as a mainstreamed practice in the universities are sparse. At an individual faculty level, however, 70% of the Malaysian faculty respondents for an IDRC supported study on OER use in Asia suggested that they had made use of OER in their teaching at some point. Incidences of inter-institutional cooperation in producing or using OER were found to be rare³.

¹ <http://www.hewlett.org/programs/education/open-educational-resources>

² Accessed from http://www.mohe.gov.my/portal/images/penerbitan/JPT/Pengurusan_Pembangunan_Akademik/Open_Educational_Resources_in_Malaysian_Higher_Learning_Institutions.pdf

³ IshanSudeeraAbeywardena, GajarajDhanarajan and ChooiKhair Lim, “Open Education Resources in Malaysia” in Open Education Resources: An Asian Perspectives, Commonwealth of Learning, Perspectives on Open and Distance Education, Vancouver, 2013.

Among the active users and champions of open education resources in the region, Wawasan Open University (WOU), Malaysia, has been promoting the use of OER in higher education in the region. The university began its own OER initiative in the year 2010 by setting up OER Asia portal and made a major contribution by developing and placing in the public domain, the OER Training Toolkit, a highly useful resource for beginners in the OER arena. WOU also adopted and implemented an institutional OER policy to “promote and implement the creation, reuse, remix, repurpose and redistribution of Open Educational Resources (OER) within an Open Licensing framework”⁴. The university has also developed its OER repository in collaboration with Open University of Japan⁵. This paper presents an analysis of the implementation and use of OER as courseware at Wawasan Open University for three courses across three schools of study. All courses were components of named degree programmes of the University and the OER content developed was used as the core course material delivered to the learners of the courses. User data in the form of related learner feedback, evaluation statistics as well as focus group data from faculty, tutors and other stakeholders are presented to showcase the impact the use of OER had at the institution.

Wawasan Open University-a brief Profile-WOU is Malaysia’s first and to date only, not-for-profit, private university. The university was set up in 2006 and started offering academic programmes in 2008. The university was established with an objective of enhancing access to affordable, quality higher education for working adults in Malaysia through technology supported open and distance learning. In its 8th year of operation, the University, today, offers 43 ODL and 2 on campus programmes across 4 Schools of study and has an active student enrolment of about 5,000 learners. The programmes include undergraduate and postgraduate degree programmes, graduate and post graduate diploma programmes and research degree programmes. Almost all learners in its ODL programmes are working adults.

OER use at WOU: Three courses, out of some 323 on offer at the university, amongst the earliest exemplars of OER adoption at the Wawasan Open University were analysed for this paper on use and impact of OER.⁶ The courses were **ICT in Education (M.Ed Programme); Microeconomics (BBA programme) and Programming Fundamentals with Java (B.Tech Programme)**. The courses selected were at different levels: one a masters level core course, the second, a level 1 core course of the undergraduate programme in business and the third, a level 1 undergraduate course in engineering and technology, all with different sizes of user populations. The paper is thus able to present comparative scenarios within the same policy and infrastructural environment.

All three courses were developed using OER almost entirely and these form the core content in each case. A brief description of each course is given in Appendix 1.

Two courses out of these three (Microeconomics and Programming Fundamentals) present an interesting pre and post OER comparison as they were initially offered as conventionally developed self instructional materials, as wrap around courses accompanied by a text book and were in 2012 redesigned as OER based courses.

⁴ WOU Open Licencing policy can be accessed at <http://weko.wou.edu.my/Open-Licence-Policy/>

⁵ <http://weko.wou.edu.my>

⁶ The data presented in this paper forms part of a more detailed analysis on impact of OER use in higher education institutions, for a case study commissioned by the Asian Development Bank in 2014-2015. I would like to acknowledge the support of colleagues at WOU who as course team members for these courses willingly shared feedback and course reports, and facilitated focus groups to enable data collection.

Objectives of the Study

The use of OER is actively encouraged at the university in pursuance of its stated OER policy, for new course development, course revision and updates and for providing supplementary content to value add existing content for a given course. A total of 4 full courses have so far been developed using OER.

The objectives of this study were to:

- Document and analyse the user experience of both learners and tutors for select OER based courses
- Assess the impact of OER as core content on achievement of course learning outcomes
- Assess the impact of OER use on learner performance as measured by continuous and term end assessment
- Assess the impact of OER use on cost and time efficiencies
- Assess the impact of the practice on faculty motivation
- Present information on assessment of quality of these courses
- Identify the barriers to use of OER as a matter of regular practice at the university

The study collected and analysed required information on

- Objectives of OER use at the university
- Patterns of repurposing OER
- Institutional resources utilised for OER based development
- Cost and time efficiencies attained through OER use
- User Experience
- Impact of OER use on learner performance, learning outcomes and faculty motivation
- Barriers and difficulties faced in OER use

Sources of Data Used for the Study

Both secondary and primary data was used to gather information for this study. Secondary data was accessed from course presentation reports over the last 3-4 semesters over which the OER based course had been on offer, learner assessment and learning outcomes matrices data, learner feedback collected per semester for each course. Primary data was collected through focus group discussion with course development teams, tutor groups and learners groups conducted for each course.

OER Adoption and Use at WOU- Major Drivers

As a matter of its adopted policy, OER use and adoption has been actively encouraged across the university. The major driver of use of OER was to benefit from a resource that would not result in heavy cost and could enable development of high quality materials. The university's course development costs were heavily affected by the policy of developing self instructional materials as wrap around content based on a standard text book and supplying the learners with the course materials as well as the text book. The emergence of OER presented a seemingly efficient alternative

approach to course material development using free and open source content, with the possibility of qualitative enhancement of content by accessing and adapting material from diverse resources and from world experts. The three courses selected for this study were chosen as they represented the earliest exemplars of OER use and also because they had been in use for 3 to 4 semesters allowing a series of observations to be collated for the study.

Across the three courses used in the study, the objectives of OER use were found to differ as reported by the course development teams in each case as shown in the Table 1 below.

Table 1: Objectives of OER Adoption

Course	Stated Objectives
ICT in Education	<ul style="list-style-type: none"> • To benefit from a resource that is not going to cost much • To demonstrate OER use as an alternative to the text book supported course development model in use • To bring about a qualitative improvement in the course materials using content from a diversity of world experts • Developing faculty capacity in OER use and adoption and building a cadre of well rounded, motivated academics that could energise such adoption across schools and courses
Programming Fundamentals with Java	<ul style="list-style-type: none"> • To shorten the time taken in course development specially for such technology courses where the rate of obsolescence is high • To improve quality by using work of reputed providers
Microeconomics	<ul style="list-style-type: none"> • To move away from dependence on text books and the accompanying problems of frequently changing editions , non availability of current editions and rising costs

In all three cases the course content was developed by using and adapting externally developed OER from world experts through accessing OER repositories and/or open source content.

How were the OER repurposed for use as course materials?

The use of OER on an as is basis has been referred to as ‘reuse’ in OER literature while the use by updating or localising, mixing with other OER or self-created material and then distributing them have been referred to as revise, remix and redistribution - the 4Rs of reuse, revise remix and redistribute (Wiley, Green and Soares)⁷.

The use of OER for the three courses under study shows that the 3Rs of revise, remix and redistribute were predominantly applied for these courses. While some components like video materials and graphics were reused as such, these were used in conjunction with OER from a variety of sources to create the complete course material and were supplemented with material produced by the course team to link and integrate the contents from the various sources into a single course. The approaches used for repurposing the OER across the three courses are shared below.

⁷ <http://wikieducator.org/OER> cycle% of 28straw_%29

Table 2: Approaches to Repurposing

Course	Code/Level/Credits	Approach to Repurposing
ICT in Education	EED502/05 Post Graduate, 5 credits	<ul style="list-style-type: none"> Careful selection of appropriate text resources such as journal articles, book chapters and multimedia materials- videos, audio files, panel discussion clips. Creating a dynamic content development platform (EXE) to embed multimedia components. Incorporating proprietary materials by obtaining rights to reuse. Assembling variety of resources into a cohesive structure and writing instruction linking these resources in a neat wrap around format. Inserting appropriate interactive elements such as quizzes, saq's etc.
Programming Fundamentals with Java	TCC 122/05 Undergraduate Level 1 5 credits	<ul style="list-style-type: none"> Localising the examples to reflect Malaysian industry practices. Adapting the content to reflect context and the development practices in use. Adding material developed by writer to provide for the content not available as OER but required as per the course blueprint.
Microeconomics	BBM102/05 Undergraduate Level 1 5 credits	<ul style="list-style-type: none"> Careful selection of text resources to suit the English language and difficulty level for this basic course. Simplifying the discussion and de-Americanising the language to suit Malaysian learners. writing about 38 new linking paragraphs to bring continuity and link resources from different sources. Adding local examples to the original examples. Inserting in text assessment items like SAQs and quizzes.

User Experience for the OER Based Courses

As noted above, the user experience data was collected through focus group interviews of learners and tutors, course reports presented at the end of each semester for these courses, and semester wise course surveys conducted by the university.

In all cases learner feedback after the first presentation was used to revise and improve the second presentation.

The learner feedback for the courses is indicative of better learner satisfaction.

Microeconomics: Learners found materials easier to navigate and understand as the language was more users friendly and the requirement of constantly referring to the accompanying text book was removed.

Programming Fundamentals with Java: The learners found the material to be more updated and current and reported satisfaction with not having to refer to the textbook.

ICT in Education: The learners of this Masters programme had interesting feedback to share in their focus group interaction.

- The great advantage is that everything is in one place and is very convenient, compact and informative. Can learn without access to Internet which can sometimes be patchy here.
- It is bulky and I have to reduce it to chunks to be able to navigate.
- Too much of a rich resource, would like to take advantage of all that is provided, but the time and effort is too much, so just use the amount needed for assignments and examinations.
- Embedded videos provide a welcome break from text.
- The course material is definitely very good, coming from a non ICT in Education Resource provided are more than enough, bordering on overload, sort of eye opener.
- PDFswere easier to scroll down, in this course I am required to click ‘next’ each time I want to change pages which breaks the continuity.
- For a teacher with a non ICT background and not much exposure, this course was like hands-on introduction to ICT, with all the resources I needed and more. Feel more equipped and at par with my own students in this aspect.
- Cannot download and am not used to studying directly from the computer.

The tutors in all three cases found the OER experience enriching and enabling. They reported a greater ease of mobilising resources for classroom discussion and the possibility of accessing links for in depth reading on issues they wanted to read further on. To quote from the Tutor for ICT in Education ‘for demonstration and illustration, videos could be directly accessed and played in the class’. Some Tutors suggested that an eBook format rather than the ePub format used would have been better.

Impact on Learner Performance on Assessment and Achievement of Course Learning Outcomes

The Microeconomics and Programming Fundamentals with Java courses present an interesting pre-post comparison as both were initially (from 2007-8 to 2012) offered as non-OER, self-instructional ODL material wrapped around prescribed textbooks. These were redeveloped in 2012 to be presented as OER-based courses. In both cases, course learning outcomes show improvement over the past scores. In terms of learner performance, course scores in both cases showed a progressive improvement.

As **ICT in Education** has only been offered as an OER course, it does not have comparative non-OER learner assessment figures to compare against. Data on assessment and learning outcomes compare favourably with the non-OER courses in the M. Ed programme. However, since valid comparison cannot be made between different courses and their assessment score even within the same programme, no inferences can be drawn on the impact of OER use on learner assessment or learning outcomes for this course, except on the basis of qualitative comments on the learner survey conducted at the end of each cycle where the OER based course materials were consistently rated high in their ability to meet the outcomes.

Table 3 below shows the learner performance in terms of assessment for OER and Non OER versions of the courses under study.

Table 3: Course Scores for OER-based Courses

Course performance on assessment						
Pre OER version Performance Post OER Performance (last 2 Sem)						
Course presentation	Mean OCAS	Mean OES	Course Score	Mean OCAS	Mean OES	Course Score
Programming Fundamentals with Java	75.48	50.98	63.04	75	80	67
				77	50	63
Microeconomics	76.03	49	62	74.69	58	66
				78	51	64
ICT in Education				69	55	61
				69	52	59

Impact on Achievement of Course Learning Outcomes

The achievement of course learning outcomes is measured on learning outcome matrices for the cohort as a whole for each presentation of the course. In case of both Microeconomics and Programming Fundamentals, a comparative picture of pre and post OER intervention is available to enable the impact of OER use and clearly indicates **the improvement in achievement of learning outcome post OER intervention**. A few more cycles of presentations may be needed to validate this trend. For the master's course on ICT in Education, since only the OER version was presented, the learning outcomes achievement matrix does not present a comparative picture. Learner survey comments at the end of each presentation show that OER based course materials were consistently rated high in their ability to meet expected outcomes. Table 4 presents the OER impact on learning outcomes for the courses under study.

Table 4: OER Intervention: Achievement of Learning Outcomes

Class achievements for course learning outcomes (CLO) Class achievements for course-CLO												
Pre OER							Post OER					
OUTCOMES	1	2	3	4	5	6	1	2	3	4	5	6
Microeconomics	71%	65%	58%	67%	61%	59%	70%	67%	68%	70%	71%	69%
Programming Fundamentals	55.5	56.4	62.3	55.1	56.5	50.0	56.9	68.5	53.2	50.8	56.0	53.6
ICT in Education							86.1	92.8	85.7	87.2	83.3	85.7

Impact on Cost Efficiency

To calculate the total cost of development of the course, estimates of actual man day provided by the course team members and the editing and instructional design team were used. The payments made per course to the External Course assessors for each course were included. These **costing estimates for OER based development are presented in Table 5**. To draw a comparative picture of the costs that would have resulted if non OER versions, using conventional ODL material development processes at the university had been applied, wherein an accompanying text book is also provided to the learners. The enrolment figures used for this calculation are the numbers actually enrolled for the

OER presentation in the latest semester. The **cost calculated for the Non OER version is presented in Table 6 along with the estimates of resultant savings.**

Table 5: Cost of Development of the OER Based Courses (in RM)

Courses	Course Writing Based on Faculty Time Cost	Instructional Design Based on ID and Editing Time Cost	ECA Cost (Actual Payment Made)	Total
ICT in Education	10500	10000	1500	22000
Microeconomics	4500	5000	1500	11000
Programming Fundamentals with Java	15000	5000	1500	21500

Table 6: Costs that Would have Resulted if a Non-OER Version had been Developed (in RM)

Courses	Course Writing Cost	Instructional Design/ Editing Cost	ECA Cost	Textbook Cost	Royalty Cost	Total	Savings from OER Use
ICT in Education	15,000	5,000	1,500	81,585 (USD37 × 67 enrolled learners)	-	103,085	81,085
Microeconomics	10,000	5,000	1,500	20,237 (RM59 × 343)	132,055 (11×3.5×343)	168,782	146,782
Programming Fundamentals	15,000	5,000	1,500	18,081 (RM63 × 287)	110,495 (11 × 3.5 × 287)	131,995	110,495

It may be noted that the use of OER worked out for a single semester, showed significant saving in each case. The quantum of cost efficiency is found to vary directly with the size of enrolment as the saving on textbook cost increases with enrolment.

Assessment of Quality

The institution quality assurance processes, in place for all other courses, were also utilised for the three OER based courses. These included the consultative preparation and approval of the course blueprint, consideration and approval by the university bodies, use of the external course assessor⁸ and the course feedback after each semester. In all three cases the comments of the External Course assessor were highly positive. The ECA comments for the Masters course on ICT in Education are quoted here for reference.

⁸ To get objective assessment of the quality of each course, the University appoints an External course Assessor(E CA) who is a senior academic from another university appointed for his subject expertise to assess and advise on the contents and design on the course. He is involved in the entire development process and his final comment is a prerequisite for the course to be approved and offered by the university.

“Themes are well represented and coherent. Good instructional design strategies are used, and examples and assessment are well designed.”.... The content is quite readable for learners. Cases and examples often refer to the Malaysian situation and will suit the Malaysian learners well... Learners are treated as equals throughout the text.”... There are no glossaries but the new terms are well explained. There are adequate resource materials for the learning tasks”

Impact on Faculty Motivation

One of the most important impacts of OER use and adoption at the University was the dynamic that got created towards individual uptake and use of the OER alternative by the younger faculty at the university. Initiatives on using open books i.e. using OER to replace existing content in successive revision cycles; a practice of first assessing the available OER for a given course blueprint and then commissioning the balance for external or internal writing and working towards the goal of eliminating the dependence on prescribed textbooks are indicators of the directions of a change process that has been set into motion. This dynamic has long-term implications for the way the university in future manages its course and programme development, which account for a major segment of its direct costs.

The use of OER to replace the textbook supported model of courseware development could be seen as a game-changer in the lifecycle of open universities, enabling them to produce and disseminate high quality content using free, open source materials from world experts without, in any way, negatively impacting teaching learning processes and with potential to improve learning outcomes.

As emerged from the focus group discussions with the course development team, the faculty motivations for content development based on OER varied across the three courses under study.

ICT in Education: The main driver for this pioneer OER was the urge to demonstrate to the university academics at large that OER present an alternative, much more effective route to develop and present high quality, well-designed, current course materials using a rich diversity of world experts and to lead by example. This course, in a sense, became the catalyst for others faculty members to seriously experiment with OER-based development. This particular course team was a group of senior professors at the university, OER converts to begin with, who were highly committed to the idea of bringing home the potential of OER use at WOU which has faced resource constraints in terms of both subject matter expertise in the country and finances. This course development exercise put into motion several dynamic changes- the development of OER policy infrastructure, sustained advocacy of OER use at all levels in the university and a systematic OER capacity building of the faculty. The successful completion and offering of the course has added to the motivation of all the team members as well as the school of Education faculty to pursue OER use actively.

Programming Fundamentals with Java: The course coordinator reported that the OER development experience led him to access new sources of material, the possibility of shorter development cycles, and enabled writing research papers on this new approach. Exposure to other concepts and material, led to ideas about related areas to develop in future like offering mobile based learning and experimenting with collaborative OER-based development.

Microeconomics: This course writer a full time academic staff of WOU, found the vast potential of OER very empowering and the possibility of doing away with textbooks very liberating. Revising this course almost single-handed, he was enthused about replicating the experience for his other courses. The wide exposure showed him alternative approaches to presenting concepts and ideas. He ended up writing much more than finally got used because there was simply too much good material out there to resist inclusion. He admitted experiencing something of a kid in the supermarket syndrome.

Barriers and Difficulties

Several difficulties and barriers were required to be overcome during the course development process for the three courses, some of which varied across courses. As ICT in Education was the first attempt at such development, it became a reference point for other OER based development. The development of this course preceded the development and implementation of the University's OER policy and Open Licensing policy and in fact put into motion these developmental efforts. **Table 7** below presents a summary of the barriers and difficulties encountered in the development and presentation of these courses.

Table 7: Barriers and Difficulties Faced by Various Stakeholders in OER Development and Use

Barriers/ Difficulties	Course Development Team	Instructional Design Team	Tutors	Learners
ICT in Education	<ul style="list-style-type: none"> Search and identification very time consuming Dedicated chunks of time difficult to find Search for appropriate software programme to facilitate multimedia integration Policy yet at the development stage so issues of OER with appropriate CC licence delayed search permission required for non OER content 	<ul style="list-style-type: none"> Initialising the EXE application problematic and time consuming as this was a first for the team Material from the Course development team received in instalments, making it difficult to maintain continuity in the ID process Copyright clearances not done by the CDT in all cases References at times difficult to locate 	<ul style="list-style-type: none"> Some of the scanned figures not very clear. Learners not very active in following the excellent links shared for further reading 	<ul style="list-style-type: none"> The ePub version makes printing difficult. On printing, material turns out to be too voluminous to handle The navigation of the content in this format not as user friendly as the pdf version. As learners are used to the pdf version for other courses, the requirement of needing to click 'next' after each page here was cumbersome The content is too rich and much more than required for clearing the course.

Barriers/ Difficulties	Course Development Team	Instructional Design Team	Tutors	Learners
Programming Fundamentals with Java	<ul style="list-style-type: none"> Search for OER at the required level was an issue Legal implications of using OER with different CC licences was not clear at the time Customisation of level and content were required to suit local context Content for all inputs required by blueprint not available External writer needed orientation for OER customisation and integration with his content 	<ul style="list-style-type: none"> Material from different sources had to be brought under similar presentation style and language 		<ul style="list-style-type: none"> Difficult to follow up with all the references Initially the absence of a text book felt as if we were not being given the full package
Microeconomics	<ul style="list-style-type: none"> Language and writing style of identified OER very different Adequate library support not available at that time to facilitate search CC Licence choice by WOU was found to restrict choice as OER with compatible licence only were considered. For this basic course a large variety of very rich OER were available. Narrowing down became time consuming and difficult 	<ul style="list-style-type: none"> The course writer identified much more content which needed to be edited out Some redrawing of graphics needed 		

Lessons Learned – What Could Have Been Done Better

The OER use at the university is at the initial stages of adoption cycle. Most OER-based courses have been run for a maximum of three to four presentations. The journey of development, reusing, revising, remixing and redistribution has been enriching and rewarding with important payoffs in terms of cost and time efficiencies as well as faculty competencies and motivation to progressively enhance OER use.

The journey also made for important lessons learned and led to the following assessment of things that could be done much better in future, given the benefit of the experience gained with these initial phase of OER based development.

- The prevailing modes of course developments, either textbook supported or commissioned course writer supported, are becoming increasingly unviable in terms of both time and financial resources. OER use, on the basis of the evidence generated at the university, offers a path that may lead to a far more viable alternative in terms of cost and time efficiencies, without compromise on relevance or quality of the content. The organisational commitment to such options needs to be clearly articulated and demonstrated by way of translation into academic performance assessment.
- Senior management support is vital for creating a conducive environment for highly collaborative and interactive activities like OER-based course development and publishing that span across various departments and support divisions. Wherever such support linkages are deficient, unavoidable delays follow. New models or approaches to course teams that include library expertise for OER search, software professionals for appropriate multimedia integration and presentation are necessary.
- Policy plays a critical role. Policy in the initial years of OER activity, however, is a work in progress and may require successive iterations. It is important that at any given point in time, those engaged in course development are very clear about OER appropriate for use and dissemination in accordance with the policy in place, so that search can be focussed on usable content. Clear understanding and interpretation of the CC licensing environment, especially for derivative works, is important and a lack of wide spread understanding could hamper efficient development.
- Faculty capacity building: The capacity building for OER has to be broad based and possibly institutionwide if OER use is to be mainstreamed. Individual, periodic attempts in different schools would not generate a critical mass to mobilise large scale gains.
- Faculty motivation tends to vary among people and is positively correlated to the exposure and first hand application of OER. Formal recognition of early adopter efforts needs to be made by including these practices in the institutional performance evaluation process and needs to be widely communicated across the academic community to catalyse faculty effort towards OER use.
- Demonstration effect works well especially if those with established credentials are seen to champion new developments and are willing to lead by example. Internal sharing of both successes and barriers is vital to bring about a common understanding of pitfalls to avoid and outcomes to aspire for. The experiences of course teams need to be widely shared not only by way of reports of learner performance on assessment and learning outcomes but the challenges faced during development and the coping strategies applied.

- Greatest gains are visible in case of high enrolment, compulsory, basic courses, for which incidentally, a large pool of OER is increasingly becoming available. In the initial years of OER adoption, some prioritisation of subjects selected for adoption may help demonstrate visible gains.
- Library support in the form of staff dedicated to help search for OER is highly desirable. Dedicated human resource provision at the library is needed to provide the much required support in OER search and identification for the course development team and OER users.
- Learner surveys and focus group discussions with learner groups showed that they were not really aware that their courses were developed as OER. The learners perceived them as differently presented (ICT in Education) or easier to access (Microeconomics) but had no real appreciation of why. This information needs to be widely shared, especially for mature students in a master's programme so that their involvement in the self directed learning can be encouraged with the knowledge that they are accessing world class expertise.

Summary of Findings: The use of OER as course materials at WOU was found to contribute significantly to

- Learner performance in terms of both course assessment and achievement of Learner outcomes
- Cost savings in course development
- Time efficiency in course development
- Quality of content developed
- Faculty motivation
- Largely positive user experience for learners, tutors and course developers

OER use as a mainstreamed practice could prove to be a game changer for open universities who have to constantly add value to the learner experience through high quality materials that are continually relevant and updated. Access and adoption of world class resources that can be legitimately used and locally adapted could lead to a cost efficient and time efficient pathway to quality resource material development. The study demonstrates that OER use could significantly contribute to both cost and time efficiencies, high quality content and improvement in learner performance. It was also shown to contribute to faculty motivation and the shift towards higher institutional autonomy in content creation, with lower dependence of external writers and text books

Appendix 1

OER based Courses at WOU that are presented in this paper

EED 501/05 ICT in Education is a 5 credit, one semester, compulsory course designed for students who are enrolled in the Masters in Education programme offered by WOU. This course is organised into five units addressing topics of Information and Communication Technology (ICT) in Education. The course seeks to enhance learner skills in using ICT in education. Having enrolled for this course, the learners should be able to select and organise materials, equipment, and technological tools needed to conduct instruction and accomplish the desired educational outcomes. The course requires about 18 weeks to complete. Being a Masters level course the weightage for assessment between continuous and term end assessment is 40:60.

BBM102 Microeconomics is a 5 credit, level 1 course within the Bachelor of Business Administration (BBA) program. It is a core course and must be taken by all students wishing to complete their BBA degree. There are no prerequisites to this course. The course comprises five study units and is designed to take about 18 weeks to complete. The learners are required to complete two assignments as part of their continuous assessment and appear for a term end examination to attain the credit for this course. The weightage for assessment between continuous and term end assessment is 50:50.

The course aims to introduce learners to economic problems and show you how private and government agents deal with these problems. It will cover economic efficiency and resource allocation, market versus command economy, product and factor markets and causes of market failures.

TCC 121/05 Programming Fundamentals with Java is 5 credit course level 2 which is compulsory for all Bachelor of Technology students at the SST. The course is designed to provide a structured, stimulating, environment in which learners can learn computing fundamentals using the object-oriented paradigm (model) and Java technology.

The course comprises five study units and is designed to take about 18 weeks to complete. The learners are required to complete two assignments as part of their continuous assessment and appear for a term end examination to attain the credit for this course. The weightage for assessment between continuous and term end assessment is 50:50.

1 credit at WOU is equivalent to 40 notional hours of learner workload. A five credit course would generate about 200 hours of learner workload including time spent of studying the units, attending tutorials, performing learning exercises and activities, interacting with tutors, course coordinators and peers on the lms, preparing assignments, preparing and taking the exams.

OER IMPACT STUDY PERCEIVED BY FACULTY WITHIN ODL FRAMEWORK

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Abstract

This article remarks on the key benefits of open educational resources (OER) to faculty. Discussions was on the determinants of keys that might be pertinent as beneficial to faculty. It was also projected to what extent the benefits were practicable. The research was conducted under Exploratory-Design. Qualitatively, it was understood key benefits included: (i) integration, (ii) opportunity, (iii) efficiency, (iv) enrichment, and (v) collaboration. These benefits had direct effects on: (i) enhancing student learning, (ii) augmenting teaching practice, (iii) improving productivity, (iv) catalyzing changes in teaching practice, and (v) supporting non-traditional learner. Quantitatively, the key benefit of OER was an intervening variable. Integration, opportunity, efficiency, enrichment, and collaboration were independent variables. In contrast, enhance student learning, enrich teaching practice, improve productivity, catalyze changes in teaching practice, and support non-traditional learner were dependent variables. Population was 721 Universitas Terbuka academic staff. Respondents were chosen randomly to gather data by distributing 450 questionnaires. Two hundred and three of them were distributed and finally completed. Methodologically, importance-performance analysis (IPA) and customer satisfaction index (CSI) were wittingly emulated in chorus to measure the importance of each dimension involved and the level of its beneficial. Ten hypotheses were developed and then examined. Structural equation model (SEM) was then utilized to grasp significance level and the power of relations among variables involved with reference to previous qualitative outcomes. Six out of ten hypotheses were validated by the analysis. It was statistically inferred that key benefits of OER to faculty were affected by: (i) efficiency and (ii) integrations. Correspondingly, (iii) teaching practice enhancement, (iv) productivity improvement, (v) catalyzing changes in teaching practice, and (vi) supporting non-traditional learners were influenced by moderating variable. Conversely, key benefits of OER were neither intercorrelated one another by (i) opportunity, (ii) enrichment, and (iii) collaboration nor (iv) student learning enhancement.

Keywords: OER, impact study, Exploratory-Design, IPA, SEM

Introduction

Universities play vital role in creation, analysis, and spreading of knowledge and other academic entity. Advances in information and communication technology (ICT), the rise of internet/large-scale digitization of information create openings to transform how teaching/learning is occurred, how knowledge/information is generated/distributed, and how interactions with students/staff/institutions is facilitated (de Hart, 2014). Open means sharing and refers to eradication of obstacles to access; it does not always mean gratis. Open education is described as not limited to open educational resources (OER) alone. It draws upon open technologies that facilitate collaborative, flexible learning, and open sharing of teaching practices that empower educators to benefit from their associates. It may also grow to incorporate new approaches to assessment, accreditation, and collaborative learning.

OER are described as teaching, learning, and research resources reside in public domain/have been published under intellectual property license that allows their free use by others. They include full courses, course materials, textbooks, audio/video streaming, evaluation, software, tools, or techniques used to preservation access to knowledge (Aitkens *et al*, 2007). Universitas Terbuka (UT) Indonesia is also influenced, even forced to integrate OER by incorporating them into operational plans (UT, 2015a & 2015b). It is belived that by integrating OER into such service will bridge students to muddle through subjects they undertake. Within this five years, OER in UT milieu become gradually an integral part of service through ICT-based mode.

OER adoption/integration to plausible academic gave opportunities/benefits to anybody, primarily to faculty. It was confirmed UK OER impact study, with specific reference to the benefits to institutions and academic/learners was unquestionable; apart from minor impediments still take place. Key benefits elaborated are related to factors in learning environment; pedagogic, attitudinal, logistic, and strategic sphere of influence (Masterman *et al*, 2011).

This study was accomplished to explore OER and benefits to faculty to take up course of actions on the *use* rather than production to assure students' achievement. It also aims at distinguishing how variables involved were intercorrelated. Further: (i) What benefits can OER offer to faculty? (ii) How are pedagogic, attitudinal, logistic, and strategic factors conducive to sustain practice in the use of OER? (iii) Are integration, opportunity, efficiency, enrichment, and collaboration positives to those benefits? (iv) Are they applicable to Indonesia through UT tradition?

Previous Study and Framework

Verified key benefits to educator remains in some fundamentals (Masterman *et al*, 2011). They are: enabling resources to be seamlessly integrated into students' environment; addressing students' needs via providing opportunities for supplementary learning and presenting content in different ways to address preference; saving teachers effort by empowering to offer materials/activities where they lack skills to create themselves; benchmarking their own practice in terms of content/approach/quality; enabling teachers to teach topics outside their expertise; stimulating network among teachers; and improving new collaborations in searching common interests. Additionally, enabling factors might be effective to sustain practice of integrating OER can be viewed from pedagogic, attitudinal, logistic, and strategic aspects.

Pedagogic: six attributes are valid to be viewed, partly inspired by Nagashima (2014) and Kawachi (2013). They are: relevance, provenance, pedagogic intent, granularity, media, and topicality. Attitudinal: five attributes are pertinent to be counted. They are: conceptualization of teaching to support independent learners; acknowledgement that combining materials they have authored from other sources; confidence (subject/teaching) to share to their own materials; readiness to learn by expounding professional practice; and sense of responsibility for inspiring comparable attitudes.

Logistic: four attributes are meaningful to be viewed. They are: volume of resources, technical and implementation issues, discoverability, and lack of licensing. Strategic: impact on individual practice is most likely achieved within dimension of social practice (networks of like-minded individual who are receptive to suggestions), and ready to share their own resources. Such networks might be fostered through: relying on diffusion of bottom-up initiatives, implementing institution-wide strategy to consistency in OER use, and identifying individuals/small groups using OER on their own initiative into a more structured strategy for diffusion.

OER use can be seen as trigger for following practices. Learners: implementing open pedagogic model, providing learners with repertoire of rich/diverse resources may include reused content in open networks. Teachers: sharing/collaborating on content and encouraging them using open content. Community: opening up content to distance learners who are not formally enrolled in university courses and making knowledge publicly accessible (inline with Geser, 2007).

Those elaboratives are fundamentals underpinning conceptual framework (Figure 1). Concept previously described is used as basis to propose operational framework (Figure 2); will be achieved under quantitative approach (Hair *et al* 2009).

Figure 1: five unified dimensions should be noticed, namely key benefits of OER to faculty. They consisted of integration, opportunity, efficiency, enrichment, and collaboration. These dimensions are determined as a result of literatures review/in-depth interviews followed by focus group discussions with selected faculty members. Group discussions ensue that the key benefits can be assessed by perceiving related attributes included within those dimensions.

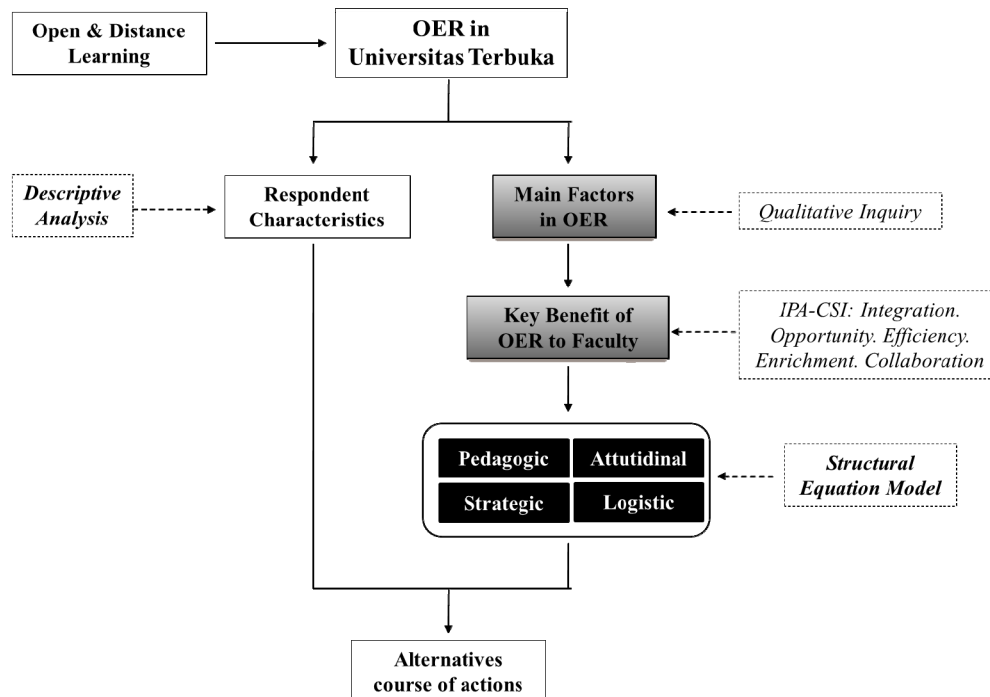


Figure 1: Conceptual framework

Qualitative approach suggested integration includes attributes on student situation, ways of avoiding external link, and reducing possibility of broken link as benefits. Opportunity includes attributes on supplementary materials, reinforcing skills, and regarded as alternatives of presenting materials. Group discussions insisted (from efficiency) benefit includes role of sharing material, benchmark of content, and embedding quality assurance in creating contents. Attributes able to teach subject out of current expertise, enlarging horizon, and able to relate subject are benefits/enrichment. In terms of collaboration, another dimension of benefit includes appropriating resources ability, filling unpredictable gaps, and searching for common interests.

The qualitative inquiry also asserted benefits had effects to five factors quantitatively. First, enhancing student learning. Attributes: as learning supplement out of classroom and preparation, practice, reinforce, and revise of required skills. Second, enhancing teaching practice. Attributes: enhancing what students are able to do in their time and visualizing a complex concept/process. Third, impact on productivity. Attributes: able to find, evaluate, and contextualize video/animation. Forth, catalyst for changes in teaching practice. Attributes: able to integrate development and master materials easier as distance learner. Fifth, support non-traditional learners. Attributes: improving qualificaion and nurturing education to anybody, anywhere, and anytime.

Before launching operational framework, it is worth noting key benefits are conceptually determined by five dimensions (X_1 - X_5). The key benefit is pointer to enhance student learning, enhance teaching practice, give impact on productivity, catalyze for changes in teaching practice, and support non-traditional learners (Table 1).

Methodology and Designs

It is on the right phase to establish operational framework (Figure 2) in accordance with structure of Figure 1 and variables involved (Table 1); including attributes. This framework is used as a basis to determine methodology, design, and ways of ensuing analysis accomplished quantitatively. This inquiry uses Mixed-Methods, Exploratory-Design (Creswell & Clark, 2011). It is prearranged under qualitative approach first and followed by quantitative series. Two instruments are developed; list of questions for in-depth interviews and/or focus-group discussions qualitatively and the questionnaire for quantitative purpose.

Table 1: Variables and Dimensions

No	Variables	Dimensions	Notes for the Questions
1	Integration X_1	X_{11} : Student situation X_{12} : Avoid external link X_{13} : Reduce broken link	Each independent variable (X) has three dimension and three questions should be answered by respondents
2	Opportunity X_2	X_{21} : Supplement materials X_{22} : Reinforce skills X_{23} : Alternative presentation	
3	Efficiency X_3	X_{31} : Shared materials X_{32} : Content benchmarking X_{33} : Quality assurance	
4	Enrichment X_4	X_{41} : Teaching out of expertise X_{42} : Enlarging the horizon X_{43} : Able to relate subjects	
5	Collaboration X_5	X_{51} : Appropriating resources X_{52} : Filling the gaps X_{53} : Searching for common interests	
6	Key benefits of OER to faculty $Y_{(1-4)}$	Y_1 : Pedagogic (relevance, granularity, contemporaneity) Y_2 : Attitudinal (conceptualization, confidence, responsibility) Y_3 : Strategic (network, organization, governance) Y_4 : Logistic (resources, technicality, discoverability)	Each question within X is answered two times simultaneously; first question is to measure applicability and second is to measure level of its importance
7	Enhance student learning $Y_{(5-6)}$	Y_5 : Supplementary learning out of the classroom Y_6 : Prepare, practice, reinforce, revise of skills	Key benefits [$Y_{(1-4)}$] is dependent variable upon X (X_{1-5})
8	Enhance teaching practice $Y_{(7-8)}$	Y_7 : Enhance student are able to do in their time Y_8 : Visualize complex concept/process	While others [$Y_{(1-4)}$] are determined by key benefits
9	Impact on productivity $Y_{(9-11)}$	Y_9 : Find video/animation Y_{10} : Evaluate video/animation Y_{11} : Contextualize video/animation	
10	Catalyst for changes in teaching $Y_{(12-13)}$	Y_{12} : Integrated development Y_{13} : Mastering materials for ODL academically	
11	Support non-traditional learners $Y_{(14-15)}$	Y_{14} : Improving qualification for everybody Y_{15} : The university is able to nurture education for all nations	

Table 1 and Figure 2 designated highlights influencing Key Benefits leading to Enhance Student Learning, Enhance Teaching Practice, Impact on Productivity, Catalyze for Changes in Teaching Practice, and Support Non-traditional Learners. Benefits have attributes: Pedagogic (relevance, granularity, contemporaneity); Attitudinal (conceptualization, confidence, responsibility); Strategic (network, organization, governance); and Logistic (resources, technicality, discoverability).

Key Benefits (Y) was assessed by perceiving attributes of: Enhance Student Learning ($Y_{5,6}$), Enhance Teaching Practice ($Y_{7,8}$), Impact on Productivity ($Y_{9,10,11}$), Catalyst for Changes ($Y_{12,13}$), and Support Non-traditional Learners ($Y_{14,15}$). Instrument consists of 2x19 questions with Likert Scale 1-5 related to benefits of OER and its importance level, plus 11 additional questions to validate independent related to moderating variable.

Variables are explored through questionnaire (Tjiptono & Chandra, 2011). A survey is started to assemble data from respondents (Fowler, 2014). A purposive sampling was chosen to select respondents for qualitative purpose and simple random sampling was used to determine respondents for quantitative purposes (Cochran, 1977; Sugijono, 2012). An IPA-CSI were emulated with intent to simultaneously measure beneficial level along with its importance degree (stimulated by Kitcharoen, 2004; Silva & Fernandez, 2010; Wong *et al*, 2011). SEM is then utilized to detect relations power among variables (Wijayanto, 2008).

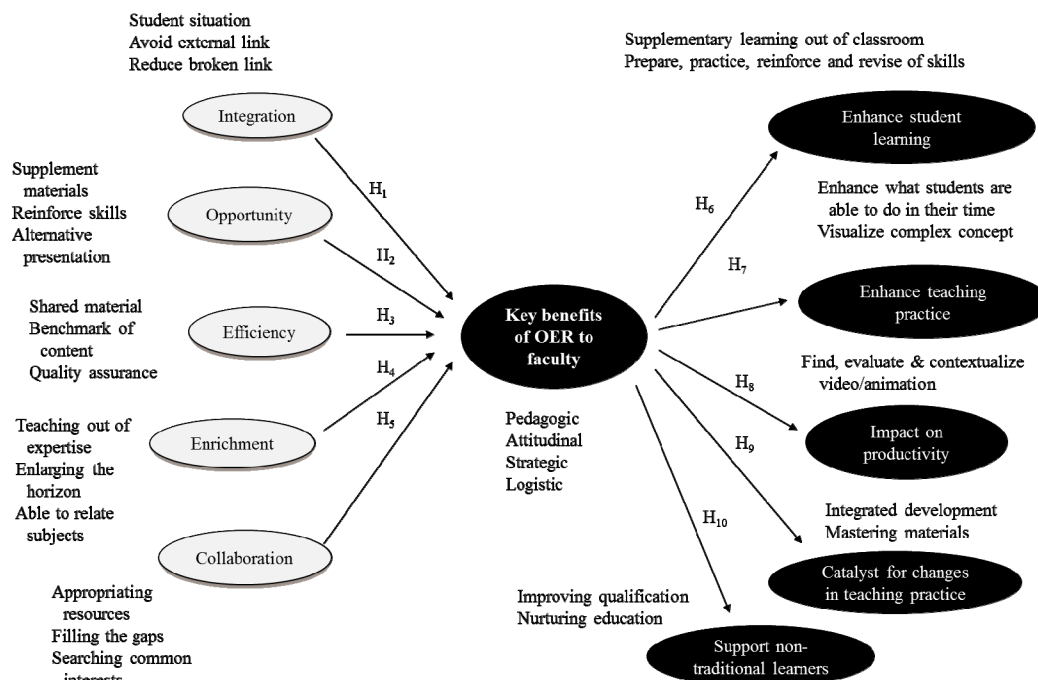


Figure 2: Operational framework

This inquiry scrutinizes ten hypotheses (H, Figure 2). They are: Key Benefits of OER are influenced by: Integration (H_1), Opportunity (H_2), Efficiency (H_3), Enrichment (H_4), and Collaboration (H_5). Likewise, Enhance Student Learning (H_6), Enhance Teaching Practice (H_7), Impact on Productivity (H_8), Catalyze for Changes (H_9), and Support Non-traditional Learners (H_{10}) are influenced by Key Benefits.

Results and Arguments

Before conversing results, it is cherished to signify characteristics of respondents (Table 2), as this will augment perception on outcomes. Results of analyses are detailed as follows.

Table 2: Respondents Characteristics

Population	721		Respondents Selected Respondents		203 (28.15%) 9	
Faculty/%	Education	47.29	Social Science	16.74	Economics	23.15
	Grad-Program	0.49	Mathematics and Natural Sciences			12.31
Degree/%	Doctoral	8.86	Master	82.26	Bachelor	8.86
Experience (Year/%)	0 – 5 = 1.97	6 – 10 = 16.25	11 – 15 = 13.79	16 – 20 = 14.77	21 ⁺⁺ = 53.20	
Age (Year/%)	20 – 29 = 0.49	30 – 39 = 18.71	40 – 49 = 16.25	50 – 59 = 49.26	60 ⁺⁺ = 15.27	
OER Experience (Year/%)	<1 = 12.80	1 – 2 = 41.87	3 – 4 = 25.61	5 – 6 = 10.83	7 ⁺⁺ = 8.86	
Lecturer/%	Professor 0.49	Senior 26.60	Junior 55.66	Assistant 30	Candidate 3.94	

Hypotheses. Figure 3 displays four hypotheses are not validated by analysis. They are: (1) $H_2 = 0.18$ (Opportunity-Key Benefits), (2) $H_4 = 0.13$ (Enrichment-Key Benefits), (3) $H_5 = 0.24$ (Collaboration-Key Benefits), and (4) $H_6 = 0.18$ (Key Benefits-Enhance Student Learning), as the $t_{\text{values}} \leq 1.96$ ($\alpha = 5\%$).

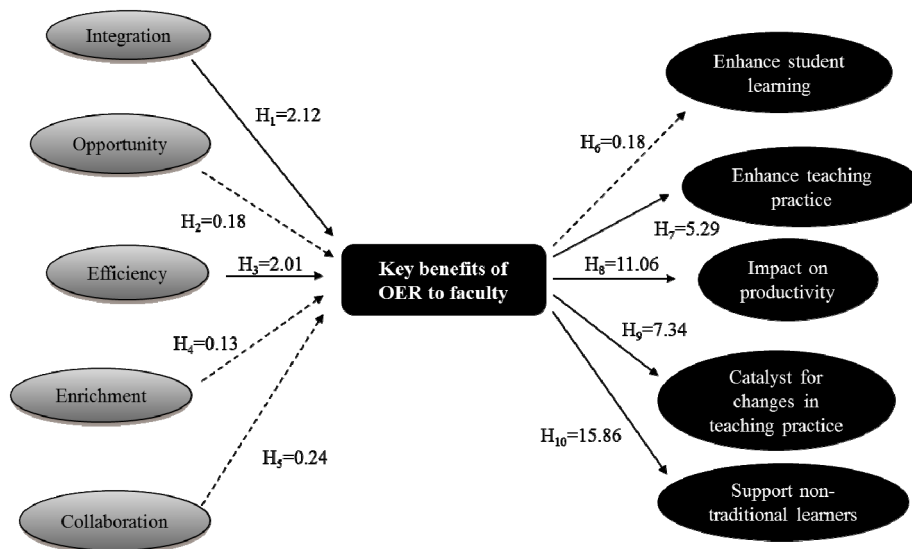


Figure 3: The t_{value} of analysis

The other six hypotheses are positively confirmed by analysis. They are: (1) $H_1 = 2.12$ (Integration-Key Benefits), (2) $H_3 = 2.01$ (Efficiency-Key Benefits), (3) $H_7 = 5.29$ (Key Benefits-Enhance Teaching Practice), (4) $H_8 = 11.06$ (Key Benefits-Impact on Productivity), (5) $H_9 = 7.34$ (Key Benefits-Catalyst for Teaching Practice), and (6) $H_{10} = 15.6$ (Key Benefits-Support Non-traditional Learner), as the $t_{\text{values}} \geq 1.96$ ($\alpha = 5\%$).

Before describing the end results, it is worth revealing beneficial level and degree of its importance consciously *imitated* from IPA-CSI attitudes. The analysis engenders dots of key benefits attributes related to relevant quadrants to comprehend its behavior (Figure 4). Figure 4 has four Q (quadrants): 1. Q_1 (Concentrate Here), 2. Q_2 (Maintain Performance), 3. Q_3 (Low Priority), and 4. Q_4 (Possible Overkill); following Wong *et al* (2011).

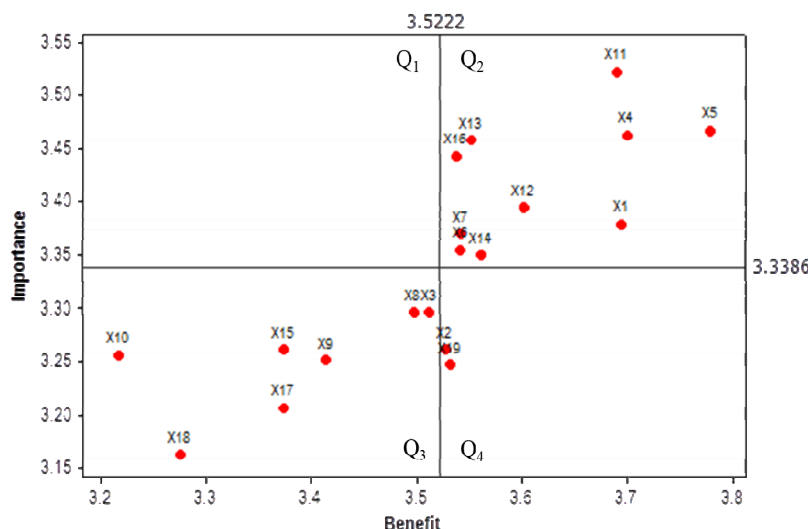


Figure 4: IPA chart

Q_1 has no attribute should be seriously noted. Q_1 indicates beneficial is at a low level whereas degree of its importance is high. This implies the University has no problems in integrating OER in strategic/operational level. It denotes that faculty is aware of OER movement and it gives them gains. This is a good signal in adopting OER movement in UT milieu.

Q_2 includes 10 points should be recognized. They are: (1). X11 (X_{42} : enlarging horizon), (2). X5 (reinforce skill), (3). X4 (supplement materials), (4). X13 (appropriating resources), (5). X16 (pedagogic), (6). X12 (able to relate subject), (7). X1 (student situation), (8). X7 (shared materials), (9). X6 (alternative presentation), and (10). X14 (filling gaps). This quadrant is a symptom of both benefit and degree of its importance being concurrently placed at a high level. The University must take care of these cautiously as they are good examples so that more faculty members get involved and gain more advantages. Attributes fall into this quadrant are the strength and pillar of adopting-promoting OER and they should become the pride of the University.

Q_3 has seven points which should be attended to. They are: (1). X8 (content benchmarking), (2). X3 (reduce broken link), (3). X15 (searching for common interest), (4). X9 (quality assurance), (5). X10 (teaching out of expertise), (6). X17 (attitudinal), and (7). X18 (Strategic). This quadrant is indication both benefit and degree of its importance are in low category. The University should classify these as 'next' focus after concentrating on critical spots in Q_2 . Any attribute falls into this quadrant is not critical, poses no threat.

Finally, two points are classified as **Q₄** members. They are: (1). X2 (avoid external link) and (2). X19 (logistic). This quadrant indicates attributes are considered less important but faculty regarded them as high in benefit. Attention to attributes in this quadrant can be less focused so the University can save costs by redirecting them to take up vital spots by anticipating no attributes will fall into Q₁ in future and keep maintaining fundamental spots in Q₂.

Having positioned all attributes, we are in position to relate loading factors to observe power of relations of each variable involved under SEM (Wijayanto, 2008 & Hair *et al*, 2009) to work out the end results (Figure 5).

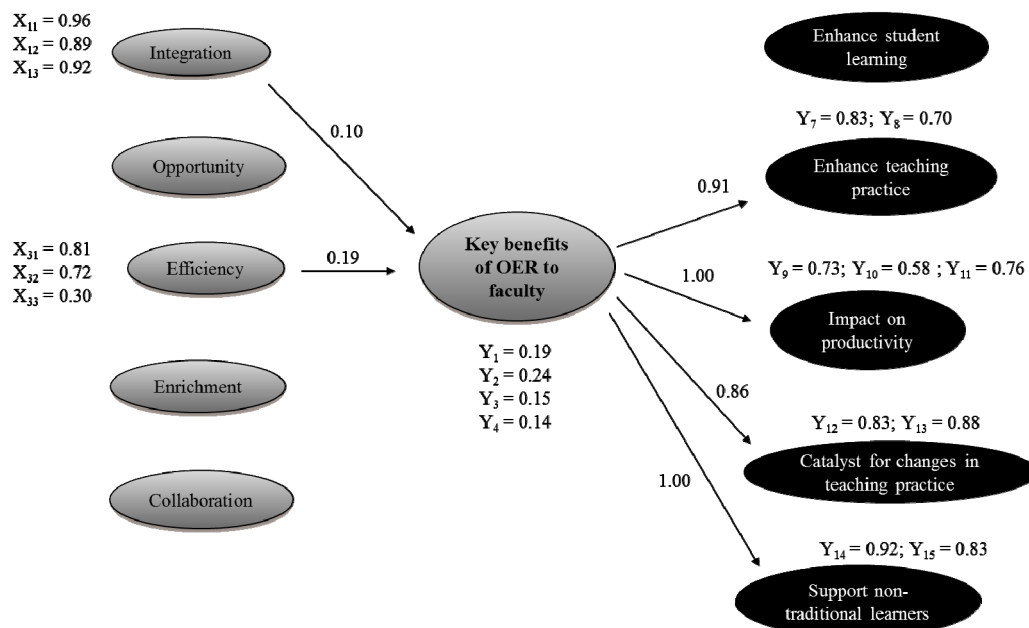


Figure 5: Loading factor

Figure 5 displays five prime final upshots quantitatively, as follows:

1. The first effect is related to dimensions directly influencing key benefits. They are: (i) Efficiency (X₃ = 0.19) and (ii) Integration (X₁ = 0.10). The other three (Opportunity, Enrichment, Collaboration) have no influences.
2. The second finding is related to the rank of attributes in Efficiency (X₃). They are: (i) X₃₁ (shared materials, 0.81), (ii) X₃₂ (content benchmarking, 0.72), and (iii) X₃₃ (quality assurance, 0.30). The rank in Integration (X₁) is: (i) X₁₁ (student situation, 0.96), (ii) X₁₃ (reduce broken link, 0.92), and (iii) X₁₂ (avoid external link, 0.89).
3. The third outcome, sequence of attributes in key benefits (Y): (i) Y₂ (attitudinal, 0.24), (ii) Y₁ (pedagogic, 0.19), (iii) Y₃ (strategic, 0.15), and (iv) Y₄ (logistic, 0.14).
4. The fourth is associated with relations power of moderating variable and dependent variables. Key Benefits (Y) have significant effects orderly, as follows: (i) Impact on Productivity and Support Non-traditional Learners (1.00), (ii) Enhance Teaching Practice (0.91), and Catalyst for Changes (0.86). This entails Enhance Student Learning is not interrelated with moderating variable.

5. The fifth is ranks within dimensions of: (1) Support Non-traditional Learner (1.00): (i) improving qualification ($Y_{14} = 0.92$) and (ii) able to nurture education ($Y_{15} = 0.83$); (1b) Impact on Productivity (1.00): (i) contextualize video/animation ($Y_{11} = 0.76$), (ii) find video/animation ($Y_9 = 0.73$), and evaluate video/animation ($Y_{10} = 0.58$); (2) Enhance Teaching Practice (0.91): (i) students are able to do in their own time ($Y_7 = 0.83$), (ii) visualize complex concept/process ($Y_8 = 0.70$); and (3) Catalyst for Changes (0.86): (i) mastering material easier ($Y_{13} = 0.88$) and (ii) integrate the development ($Y_{12} = 0.83$).

Prior to validating conclusive line under Mixed-Methods, it is sensible to reflect whether SEM result is in 'good fit' category. If so, it is reliable to assess hypotheses and engender loading factors to confirm its power of interrelations. The analysis confirmed they are not considered in 'good' category (Table 3). This implies that validated model is not highly dependable. Conceptual/operational model may have substantial/technical differences in theoretical and/or methodological intensity.

Table 3: Goodness of Fit

Goodnes of Fit	Cut-off Value	Results	Notes
RMSEA – Root Mean Square Error Approximation	≤ 0.08	0.088	Marginal Fit
RMSR – Root Mean Square Residual	< 0.05 or < 0.10	0.190	Marginal Fit
GFI – Goodness of Fit	≥ 0.90	0.790	Poor Fit
AGFI – Adjusted Goodness of Fit Index	≥ 0.90	0.690	Poor Fit
CFI – Comparative Fit Index	≥ 0.90	0.850	Marginal Fit
NFI – Normal Fit Index	≥ 0.95	0.790	Poor Fit
IFI – Incremental Fit Index	≥ 0.90	0.850	Marginal Fit

Despite goodness of fit is *not* good fit, it is still valuable to use it as point of reference. Three core evaluations needed to be explored to make use of consequences. The first is gap obtained using Exploratory-Design. The second is reason adjacent to approach used, referring to respondents characteristics. The third is implication of findings for further research with comparable theme.

Under qualitative procedure, key benefits are interdependent with integration, opportunity, efficiency, enrichment, and collaboration dimensions. Likewise, moderating variable was interconnected with independent variable. Remarkably, only two dimensions of independent variables (efficiency and integration) are interconnected with moderating variable. Besides, enhancing student learning and independent variable were not interdependent. This implies qualitative versus quantitative results are considerably varies; they are providentially not contradict.

Exploratory-Design was conducted by first collecting/analyzing data qualitatively; then build quantitative structure prior to interpretation (Creswell & Clark, 2011). It aims at testing/measuring qualitative exploratory findings. Prior to building operational framework, conceptual framework should be first established as the model will be statistically scrutinized. Thus, connecting two strands with respect to theoretical/instrumental elaboration become crucial. In fact, end results show four hypotheses are not accomplished in chorus. Order of dimensions are also disharmony. Quantitative approach is still *unable* to prove qualitative exploratory findings.

Referring Table 2, most respondents are qualified viewed from background, working experience/age, and qualification. Nonetheless, the vast majority have limited involvement/experience in OER; 19.69% involved in OER for five years or more. It is plausible they may not been able to foresee collaboration, enrichment, and opportunity as pivotal give benefits to faculty. Besides, as respondents are academic, they may not foresee this benefit is able enhancing student learning.

Anticipating analogous research for further judgement, it is prominent to explore respondents magnitude not only restricted to faculty but also welcoming students/experts. Having involved them, it will enlarge effects obtained in accordance with conceptual/operational framework resulted from qualitative inquiry. Sensible insight is necessary to be wisely perceived to avoid probable limitation in retrieving harmony between qualitative/quantitative outcomes. Above all, searching-adopting appropriate methodology is vital to assure impact study obtained is functional/dependable.

Closing Interpretation

This study discovered somewhat significant differences between what was obtained from qualitative routines as compared to quantitative approach. Four out of ten hypotheses assessed, are not validated by the analysis. This implies established qualitative frame is imperfectly approved by quantitative analysis; they differ, unnecessarily contradicting in high intent. The result is still useful in prioritising critical attributes should be cautiously taken in integrating OER for students' needs.

With *emulated* IPA-CSI procedure, the inquiry is able to show up ten vital attributes as clues that OER movement in UT is assertively promising. Ten attributes found are pillar and pride of the University that OER adoption as a means of equipping services to students took place. The adoption of OER can be regarded as hint that the University is on the right path given less than 20% of faculty get experienced in OER for five years/more; it is visibly constructive symptom while 80% are novice.

Most faculty categorized attitudinal in the first place as a hint to key benefits of OER. This entails the University should take this upshot by noticing conceivable constraints that they might deal with, especially on conceptualization, confidence, and responsibility. The University is well-advised to anticipate adoption, integration, and implementation of OER will not obstruct other faculty to get involved. Conjecturing this know-how is universally prototypical in ODL, management and academic would be well-suggested to ruminate on the variables/dimensions/attributes involved previously discussed. It aims at giving them thoughts that key benefits to faculty become an appropriate tool to sustain completion existence of OER as an integral part of program in ODL ambience.

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CRITICAL SUCCESS FACTORS OF E-LEARNING IN OPEN AND DISTANCE LEARNING (ODL) INSTITUTIONS

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Abstract

The objective of this paper is to specify the Critical Success Factors (CSFs) of E-learning in Open and Distance Learning (ODL) in higher education institutions. The CSFs were identified by an extensive review of scholarly journals. The research method was analysing and synthesising the existing literature review based on these journals. The literatures were reviewed to determine items relevant to E-learning success as implementation, criteria and indicator. A total of 10 peer reviewed scholarly journals, published during 2000-2015, were selected from ODL institutions' reference databases. The flexible method of qualitative content analysis was used in the study to analyse the text data. The result findings on the CSFs for ODL can be grouped into five factors: 1) learning environment, 2) instructional design, 3) services support, 4) course evaluation and 5) learners' characteristics. It is suggested that each of these five factors is important to enhance efficiency of E-learning courses in ODL institutions. It is a concrete approach to guide ODL in higher education institutions for achieving the success of the institute's vision and make all staff members know what they have to do for the success of E-learning.

Keywords: Critical Success Factors, E-learning, Open and Distance Learning and Higher Education Institutions

Introduction

Open and Distance Learning (ODL) is a multi-dimensional concept aimed at bridging the time, geographical, economic, social, educational, and communication distance between learners with institution, academics, courseware and peers. According to Du Plessis (2012), ODL focuses on removing barriers to access learning, flexibility of learning provision, learner-centeredness, supporting learners and constructing learning programmes with the expectation that learners can succeed. Nowadays, the invention of the Web technologies make online learning increasingly accessible, open, flexible, allowed new pedagogical models to emerge and reasoned the revolution in digital knowledge that enabled greater and faster human communication and collaboration (Harasim, 2003). For example, E-learning has become every day and commonplace features of ODL institutions across the world as it can be a way to produce a quality and innovative generation (Mat, 2000). E-Learning eliminates the barriers of time and distance creating universal, learning-on-demand opportunities for adults, who are no longer of the formal education. However, in developing fully online programmes, it is critical that higher education institutions make sufficient investments in their technology and services infrastructure. The efficient operation of a fully online programme rests upon the strength of its technology and services architecture, as the core business of the higher education institution is now being delivered entirely via the web (Gallagher, 2002). However, there are several factors affecting E-learning implementation success that can assist ODL in higher education institutions in increasing the efficiency and effectiveness of adoption online learning process. Some of these factors are technology infrastructure, institution support, online course development, and instructors or learners' characteristics. All these are known as Critical Success Factors (CSFs). The

CSFs are variables that are fundamental to the success of the implementation, and an institutions must handle these CSFs well in order to have a successful implementation (Frimpon, 2011).)

Objective of the Study

The main objective of this study was to identify the CSFs of E-learning in ODL in higher education institutions from the existing literature reviews from 2000 to 2015. These literatures were reviewed to determine items relevant to E-learning success as implementation, criteria and indicator. Understand these factors; ODL in higher education can come up with some appropriate interventions which will improve the management of the institutions in increasing the efficiency of E-learning courses delivery for a higher professional degree and lifelong learning.

Research Question

What are the Critical Success Factors that ODL in higher education institutions should take into consideration when adopting E-learning tools?

Significant of the Study

E-learning is internet-enabled learning. Components can include content delivery in multiple formats, management of the learning experience, and a networked community of learners, and faculty or content developers (Cross, 2004; Wang, 2003). In today's fast-paced information age, higher education institutions that implement E-learning provide their learners with the ability to turn change into an advantage to better market the learners. The measure of E-learning success should incorporate different constructs in order to assess the extent and nature of this success (Wang, 2003). An instrument that identifies and measures the CSFs of E-learning from stakeholders' perception will be of great value to researchers, practitioners and higher education institutions. Identifying and measuring E-learning CSFs can help higher education institutions to better develop E-learning systems that fit both learners' and instructors' expectations. Many higher education institutions are seeing the move on to e-Learning that had saved cost by merging traditional courses with online learning innovations (Selim, 2005; Rudestam & Schoenholtz, 2010). It will be interesting to see how the increased use of online learning will fully affect distance education enrolments in institutions. Therefore, the study of factors that affect critical success for ODL is important for many stakeholder groups. There are several factors need to be considered when developing and implementing for the success of distance learning in online courses.

Critical Success Factors (CSFs) for E-Leaning

E-learning-based courses compare favourably with traditional learning, and E-learning learners perform as well or better than traditional learning learners (Beyth-Marom, Chajut, Roccas, & Sagiv, 2003). This shows that learners like to use E-learning, if it facilitates their learning and allows them to learn anytime anywhere in their own way (Papp, 2000). A complex technological initiative like an E-learning deployment is an undertaking involving a multiplicity of factors that impact the implementation to varying degree. Bruno and Leidecker (1984) defined CSFs are characteristics, conditions or variables that when properly sustained, maintained, or managed, can have a significant impact on the success of a firm competing in a particular industry. In addition, CSFs are also defined as those factors addressed significantly to improve project implementation chances. Soong, Chan, Chua and Loh (2001), using a multiple case study, verified that the E-learning CSFs are human factors, technical competency of both instructor and learner, E-learning mind sets of both instructor and learner, level of collaboration, and perceived information technology infrastructure. They recommended that all these factors should be considered in a holistic fashion by E-learning adopters. The CSFs are important and indispensable especially in ODL in higher education institutions. These CSFs can assist the online stakeholder groups to be guided in their operation in order to achieve the

institution's vision and mission. Furthermore, the CSFs for ODL must be critically taken care because the successful and sustained adoption makes it necessary for an effective combination of pedagogies, technologies and management of resources.

Several researchers attempted to identify and analyse E-learning CSFs for ODL. A study conducted by Papp (2000) to explore distance learning from a macro perspective and he suggested seven aspects of CSFs that can assist faculty and universities in online environment development as the following, 1) intellectual property, 2) suitability of the course for E-learning environment, 3) building the E-learning course, 4) E-learning course content, 5) E-learning course maintenance, 6) E-learning platform, and 7) measuring the success of an E-learning course. Another study conducted by Allen and Seaman (2005) in United States (U.S.) from 2003-2004. The study was annually surveyed online learning quality pillar of The Sloan Consortium and understood the foundation for assessing quality of online learning beyond the U.S. borders. The study found that the Sloan quality factors were: 1) access, 2) learning and effectiveness, 3) learner support, 4) cost effectiveness, and 5) faculty satisfaction. A study conducted by Vaye-U-Lan (2007) stated that resources that support e-Learning include three main aspects as the following, 1) human resources, 2) computer and internet technology resources, and 3) e-Learning contents resources. Chantanarungpak (2010) synthesised the success indicators of E-learning system for higher education institutions in Thailand and he found that the factors were: 1) media and technology, 2) institution and management, 3) instructional design, 4) supporting factors, and 5) evaluation components.

In addition to above studies, there is another CSF, the characteristics of learners toward E-learning. Adult learners are different from traditional college students. Many adult learners have some responsibilities (families and jobs) and situations (transportation, childcare, domestic violence and the need to earn an income) that can interfere with the learning process. Most adults enrol ODL programmes are voluntarily and manage their classes around work and family responsibilities. Benigno and Trentin (2000) proposed a framework for the evaluation of E-learning-based courses, focusing on two aspects: the first is evaluating the learning, and the second is evaluating the learners' performance. They considered factors such as learner characteristics and learner-learner interaction were some critical success factors that can be emphasised by the universities in E-learning environment development. Volery and Lord (2000) had surveyed on 47 learners enrolled in an online based management course at Australian University and found that one of the CSFs in online education was learners' characteristics such as learners' perspectives about the previous use of technology. Another study conducted by Frey and Alman (2003) found that self-directed learning among learners is one of CSFs should be emphasised by ODL institutions. An active learning and scaffolding and support are important for self-directed learning. Learners need support to begin the process of learning, and they must be actively involved as they incorporate new information into the old. Thus, some support for learners as they grow into self-directed learners and include tasks that let the learners use their knowledge and experience are significant.

From the above details, it is apparent that there are numerous factors affecting online learning implementation that can assist especially ODL among higher education institutions in increasing the efficiency and effectiveness of adoption E-learning process. Therefore, this study will seek for the appropriation of CSFs to guide the use of ODL in higher education institutions.

Methodology

Research Design

For the purposes of the study, the authors chose to use content analysis to study empirical documentation. Content analysis has been defined as a systematic, replicable technique for compressing many words of text into fewer content categories based on explicit rules of coding (Berelson, 1952). Since content analysis is a method of analysing written, verbal or visual communication messages which includes both qualitative approaches (Elo & Kyngäs, 2008), it was deemed to be the most appropriate for the intent of this study. The authors set the criteria for the themes to be studied and the content of articles in the selected journals was then coded according to these pre-set categories. Following the content analysis, the findings were reported using descriptive analysis.

Sample

There were ten scholarly reviewed journals published during 2000-2015, were selected from Open University Malaysia and University Malaya reference data-bases included in this study, *New Horizons in Adult Education* (1), *New Directions for Adult and Continuing Education* (1), *Association for the Advancement of Computing in Education* (1), *Computers & Education* (1), *European Journal of Open, Distance and E-Learning* (1), *International Journal of Multidisciplinary Research* (1), *The Electronic Journal of Information Systems in Developing Countries* (1), *International Journal of Advances in Engineering & Technology* (1), *The International Journal of Educational Management* (1), and *E-Learning Issues in Malaysian Higher Education* (1). These literatures were reviewed to determine items relevant to CSFs for ODL included implementation, criteria and indicator for the success of ODL. The selection of the journals was based on a preliminary review of journals in DE and educational technology. In the first round, 17 journals were identified. The journals to be reviewed were filtered using the following criteria:

- A specific focus on E-learning for ODL in higher education institutions
- A publication history of 10 years or more
- Publication of articles in English

Findings

The results from data analysis and synthesis method of literature review were to specify the CSFs for ODL within environment in higher education institutions. It can be grouped into 5 factors:

1. Learning environment
2. Instructional design
3. Services support
4. Course evaluation
5. Learners' characteristics

Each factor included several elements that can be explained as Table 1.

Table 1: CSFs for ODL Higher Education Institutions

Factor 1: Learning Environment			
Online learning environment refers to the locations where learners can access online resources, use systems for access to on-line course and communication, obtain tutor assistance, and receive assessment (Bhuasiri, Xaymoungkhoun, Zo, & Rho, 2012).			
Elements	Highlight		Authors
1. Learning Management System (LMS)	LMS facilitates learners' registration, the delivery and tracking of online learning courses and content, testing, and the management of instructor-led online classes.		Masrom, Zainon & Rahiman (2008)
	LMS provides instructor a set of tools that allow the relatively easy creation of online course content and the subsequently teaching and management of that course including various interactions with learners talking the course.		Selim (2007)
2. Interactive Learning	Based on three different types of effective interactions: 1) learner-content interaction, 2) learner-instructor interaction, and 3) learner-learner interaction. Most studies indicate that learner-learner interaction is CSF when their satisfaction with online learning based courses is measured.		Selim (2007)
3. Technical Infrastructure	The efficient and effective use of Information Technology (IT) in delivering E-learning base components of a course is associated with the hardware and software technology including high speed internet connection, bandwidth for download audio and video, system reliability and availability, system backup procedures, network security, courseware authoring applications, and system response.		Bhuasiri et al. (2012) Puri, 2012

Factor 2: Instructional Design			
Instructional design is the systematic process by which instructional materials are designed, developed, and delivered for learning needs and goals and the development of a delivery system to meet those needs (Wands & Blanc, 2001). The pedagogical for online learning focuses on the learning and teaching that enhance learner's commitment and engagement.			
Elements	Highlight		Authors
1. Content Quality (Pedagogical)	The content quality of writing, images, video, or flash to meets generally accepted standard of semantics, style, grammar, and knowledge.		Bhuasiri et al. (2012)
	Well-designed and selected courses content and learning material facilitate meaningful educational experiences that are essential for implementation of online learning materials such as accuracy, completeness, ease of understanding, timeliness, relevance and consistency.		Bhuasiri & et al. (2012) Selim (2007) Masrom et al. (2008)
2. Psychology of Learning	Instructor' feedback should be made available in the forms of immediate and adequate after students have at-tempted on online interaction.		Selim (2007)
3. Learning Assessment	The effective assessment of learning is to evaluate and measure benefits resulting from online learning implementation at a particular institution that will be done after their completing the course.		Puri (2012)
	The assessment method such as test studies, tasks, assignment must be valid, reliable, flexible and fair.		Masrom et al. (2008)

Factor 3: Services Support

Institution's resources are factors that must be developed for the learning support services system (Harasim, 2003). Services include the provision of supports which include equipment accessibility and computer training that are important factors for online learning acceptance (Lee, 2008). The services include administrative concerns such as management, funding, maintenance, and the delivery of resources is positively related to learners' and instructors' satisfaction (Ozkan & Koseler, 2009).

Elements	Highlight	Authors
1. Communication Tools	Communication resources are used to support the interaction between instructors and learners such as e-mail, chat room, web board. The facilitated communication contributes to consistence in line with expected learning outcomes.	Puri (2012) Bhuasiri & et al. (2012)
2. Training	This factor is the development of the characteristic of online stakeholder groups, especially students and instructors, by training on competencies and partner personal development which enable all stakeholders to efficient in online learning. The training that improves the ability of people relates to technology and differently interactive learning.	Masrom et al. (2008) Musa & Othman, 2012 Puri (2012) Selim (2007)
3. Help Desk	The online support is not only just an electronic manual but also an option to help the students who request for direct assistance, such as terminology and glossary.	Puri (2012)

Factor 4: Course Evaluation

The evaluation of online courses involves many of the same criteria applied to traditional classroom courses but also necessitates the use of new criteria more directly based on the online environment. The course evaluation materials below offer a range of rubrics and guidelines for help in developing effective practices for evaluating online courses.

Elements	Highlight	Authors
1. Evaluation	Evaluation is the key to quality online learning, and having a plan for the process is the key to evaluation. Course evaluation includes formative evaluation in project management and summative evaluation in implementation plan. Evaluation process must cover all aspects the online course, to ensure that ODL systems achieve the objectives of the course.	Masrom et al. (2008) Musa & Othman (2012) Puri (2012)

Factor 5: Learner's Characteristics			
Adult learners are different from traditional college students. Many adult learners have responsibilities (e.g., families and jobs) and situations (e.g., transportation, childcare, domestic violence and the need to earn an income) that can interfere with the learning process. Most adults enter educational programmes voluntarily and manage their classes around work and family responsibilities. Additionally, most adult learners are highly motivated and task-oriented (Merriam & Caffarella, 1999).			
Elements	Highlight		Authors
1. Self-directed	Characteristics of self-directed learners include independence, willingness to take initiative, persistence in learning, self-discipline, self-confidence, and the desire to learn more. They are able to organise time, develop plans for completion, enjoy learning, and remain goal-oriented.		Frey & Alman (2003) Merriam (2000) Szilagy (2015)
2. Transformative	Transformative learning is a process of critical reflection. It is about change in learners, and it is the kind of learning that occurs when individuals make meaning out of the world through experiences. The goal of this learning style is to enable the adult learner to become a more autonomous thinker by learning to negotiate his or her own values, meanings, and purposes rather than to uncritically act on those of others.		Frey & Alman (2003) Volery & Lord (2000)
3. Experiential	Experiential learning is a concept central to andragogy. Experiences that provide learning are never just isolated events in time. Rather, learners must connect what they have learned from current experiences to those in the past as well as see possible future implications.		Cercone (2008)

Discussion

According to the studies reviewed in and summarised in Table 1, E-learning CSFs in ODL in higher education institutions can be grouped into five categories: learning environment, instructional design, services support, course evaluation, and learners' characteristics. These five aspects CSFs of ODL are related to the Information Technology (IT) explosion resulted in changes in education. E-learning integration into online courses is a component of the IT explosion; as a matter of fact, IT is the engine that drives the e-learning revolution and is conceived as the infrastructure to E-learning initiatives. IT tools include network bandwidth, network security, network accessibility, audio and video plug-ins, courseware authoring applications, internet availability, instructional multimedia services, videoconferencing, course management systems and user interface. The efficient and effective use of IT in delivering E-learning-based components of a course is of critical importance to the success of, and learners' positive attitude towards, E-learning. Thus, to ensure that the ODL higher education institutions IT infrastructure is rich, reliable and capable of providing the courses with the necessary tools to make the delivery process as smooth as possible is critical to the success of E-learning.

In addition, it is not the IT but the instructional implementation of IT that determines the effectiveness of E-learning such as services support, instructor, instructional design and course evaluation play a central role in the effectiveness and success of E-learning-enabled courses. Instructors should adopt interactive teaching style, encourage learner-learner interaction. It is very important that instructors have good control over IT and are capable of performing basic troubleshooting tasks. ODL learners

are becoming more diverse, and demand for E-learning-based courses is increasing (Gotthardt, Siegert, Schlieck, Schneider, Kohnert, Grobata, et al., 2006; Hong, 2002). Another CSFs is learners' characteristics. Learners need to have time management, discipline and computer skills in order to be successful in the E-learning era. Learners' prior IT experience, such as having a computer at home and attitude towards E-learning, is critical to E-learning success. Learners' critical characteristics were divided into three main categories: self-directed, transformative and experiential. In a relation to these, learners' characteristics towards course content factor captured their perception about the interactivity, efficiency and effectiveness of a system used by the institutions as an E-learning resources management tool. They should gain a high level of computing competency. They should master application, such as e-mail, presentation and communication, creative thinking and all the software applications needed to enhance the E-learning process.

Conclusion

This study, in line with the literature, identified and measured five CSFs that assist ODL in higher education institutions to adopt E-learning systems. CSFs, which were identified and reviewed from scholarly journals, included learning environment, instructional design, services support, course evaluation, and learners' characteristics. It is suggested that each of these five factor is important to enhance efficiency of E-learning courses. It is a concrete approach to lead functions of an online institute or course in all levels to the same directions for achieving the success of the institute's vision, and make staffs and executives know what they have to do for the success of E-learning for ODL in higher education institutions.

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OER: A NEW FRONTIER FOR OPEN KNOWLEDGE MOVEMENT IN THE NORTH EAST OF INDIA

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Abstract

The North East India Vision Document 2020, released on July 2 2008, includes education as an important component for achieving a high level of human development in this region of India. However, where there is a mismatch between the pace of development in higher education and employment in the whole of India, NE India is trapped within multifarious problems as the educated youths here are facing acute unemployment problems, which in turn has contributed to mass scale social restlessness in the region. Lack of adequate application-oriented academic courses without any focus on specialised knowledge or skill development has churned out thousands of graduates and post-graduates who are particularly unfit for any employment. Despite the presence of a large number of conventional higher educational institutions in NE India, the GER is yet to be fully harnessed. Although the total GER in NE India is higher than the national average (i.e. 20.4%), the GER in the North East Indian states seems to be varied—for example, a state like Manipur has 36% GER, followed by Arunachal Pradesh (26.9%), Sikkim (24.2%), Mizoram (21.6%), Nagaland (21.5%), Meghalaya (17.5%) and Assam (13.4%) respectively. Although there has been a mass-rooming of higher educational institutions under the auspices of both private and public parties in this part of India, they have failed to accommodate the increasing number of learners because of their restrictive nature. Here, ODL in particular can play a significant role in transforming and empowering the vibrant adult population of this region into productive human resources by providing training and equipping them with need-based skills and education which are necessary for a decent standard of living. Krishna Kanta Handiqui State Open University (KKHSOU), the only State Open University in NE India, has an important role to play in taking important initiatives not just to provide education but to produce functionally literate people who can be the harbingers of change in this region. Besides, in bringing in functional literacy with the help of Community Communication Centres and other offline and online resources, OERs may be seen as an option to develop this region educationally, economically and socially. In fact, it is through OERs that one can be a part of the Open Knowledge Movement for ensuring equity and justice among the people of this region in terms of education, health and employment in near future.

Introduction

For the greater interest of the general public and the stakeholders, the use of Open Educational Resources (OERs) have presented itself as the most viable option to disseminate knowledge and information in today's world. This is very important because ensuring the formation of a knowledge-enabled population is one of the major challenges in the higher education system in a country like India. When the use of various resources in an educational institution needs to justify its holistic role, OERs can be seen as the solution. In today's world, OERs have emerged as the resources to be used for sharing, adapting and reusing in order to educate the whole masses. But, when the usefulness of OERs has generated a full-fledged international response, the use of OER in India is still in the state of infancy although the initiatives taken under MOOCs may push the OER-movement in India to a significant height in the days ahead. This paper seeks to address the prospects and possibilities of an OER-led Open Knowledge Movement that can be initiated by the Open and Distance Learning (ODL) institute like KKHSOU in the North Eastern part India.

Objective of the Study

The primary objective of the study is to assert the significant impact OERs can have in creating a knowledge-enabled population through functional literacy in the true sense in the North Eastern region of India. Today, in India, along with the conventional mode, the ODL mode has also been growing at the fastest rate for disseminating knowledge and information to all sections of people in society. The findings of the present study will help in formulating important institutional decisions regarding what an ODL institution such as the existing State Open University in the North East of India can do to impart useful and practical education to the people of this region through the use of OERs in an equitable manner.

Research Questions

To achieve the objective of the study, the following research questions are sought to be undertaken for discussion:

- (a) What is the need for OERs in the North East of India for ameliorating the educational scenario in the region?
- (b) How can OERs be related to the Open Knowledge Movement for creating a knowledge-enabled population in the region?
- (c) How can a State Open University, with the help of OERs, become instrumental in bringing functional literacy among the people and providing economic security, educational security, and human security?

Significance of the Study

This study is of tremendous significance as education in the present century must combat all forms of exclusiveness. The North Eastern Region Vision Document 2020, released on July 2 2008, includes education as an important component of achieving a high level of human development in this region of India. This has particular relevance because the educated youth are facing acute unemployment problems, which in turn, has contributed to large scale social restlessness in the region. Lack of adequate application-oriented academic courses without any focus on specialized knowledge or skill has churned out thousands of graduates and post graduates in the region who are rarely fit for any employment. Here, ODL in particular can play a significant role in integrating them with the ‘mainstream’ of society since it is endowed with the capacity to reach out both to the urban and rural; trained and un-trained; employed and unemployed people. The success will depend on the provision of effective learning and training materials which are specifically designed to provide quality education and which enable the learners to take social responsibilities with dignity. Therefore, policies have to be made by the ODL institution like KKHSOU so that educational resources can be released in the Public Domain in the form of OERs without charging any fees, and thereby make education accessible to the whole of society. This will help us to realise the fact that a university is a people’s institution and reflects people’s wishes and expectations.

Literature Review

While doing the study, the following literatures on the use of OERs have been consulted.

1. *Open Educational Resources: An Asian Perspective*, edited by Gajaraj Dhanarajan and David Porter, COL and OER Asia, 2013.

This book has been designed to address the perspectives on OER by the Asian countries like China, Hong Kong, India, Malaysia, Pakistan, Indonesia, Vietnam, Japan, Korea and so on. Besides, it also provides some important case studies conducted in some Asian Open Universities the discussions of which provide many important ideas regarding the use and practices of OERs in the context of Asia. The experiences gained through the findings in this book will help us to conduct the OER practices in the NE Region in extensive ways.

2. *Quality Assurance Guidelines for Open Educational Resources: TIPS Framework Version 1.0*, Paul Kawachi, CEMCA, 2013.

The Commonwealth Educational Media Centre for Asia (CEMCA), New Delhi has been promoting meaningful, relevant and appropriate use of ICT-enabled OERs to serve the educational and training needs of the Commonwealth member states of Asia. In this book, TIPS stands for Teaching and learning process, Information and material content, Presentation, product and format, and System, technical and technology. These guidelines are sought to be made user-friendly in an accessible manner so that readers can easily grasp its intended meaning and purpose. Institutions like KKHSOU, which are both using OERs and creating OERs, can be benefitted by adopting these guidelines for internal quality assurance as well as disseminating knowledge through Open Access.

3. *Open Access Curricula for Researchers and Library Schools*, UNESCO, 2015.

UNESCO has developed a total of 9 modules on Open Access—5 for the Researchers and 4 for the Library Schools, as part of its endeavour to build inclusive knowledge societies through information and communication which is also one of the key objectives for UNESCO's Medium-Term Strategy. By adopting this objective, the member states of UNESCO have recognized that knowledge plays a key role in economic growth, social development, cultural enrichment and democratic empowerment. Subsequently, UNESCO has issued a unique mandate to work on Open Access (OA) policy to bridge knowledge pools on OA across the world. By consulting these modules as models, KKHSOU can also design its SLMs as part of Open Access applicable in the entire NE Region.

But despite the initiatives taken by both COL and CEMCA, OERs in the Indian context is still in the state of infancy. Although CEMCA is taking important initiatives, Indian educational institutions are yet to understand the meaning and benefits of OERs. Very few studies on OERs in the Indian universities have been done so far. But in the context of NE India, no such study has been done yet. Therefore, the present study bears tremendous significance. The high level decisions taken by KKHSOU to release its SLMs and other multimedia materials as OERs is to be seen as a welcoming step that may transform this institute into a knowledge-hub in the whole North East of India.

Methodology

While writing this paper, the descriptive research methodology has been used. However, the paper is also analytical in nature based on the extraction of data from secondary sources.

Discussion

The Present Scenario of Education in India and the North East

In the present-day India, it is observed that alleviation of poverty, guiding the youth in the right direction etc. can be ensured only through developing proper manpower planning and enhancing employability by imparting useful and skill-based knowledge. Moreover, in today's India, nearly 54% of the population is below 25 years, and 65% is below 35 years. (Census of India, 2011) This is the most productive age group and hence considered an asset for the country. Therefore, for leading this vibrant age group of people in the right direction by developing their knowledge, attitude and skills, higher education is an absolute necessity for a country like India. But providing education to all has been one of the greatest challenges India has been facing because of lower level of GER (20.8 % for 18-23 years of age group as per MHRD Report 2011-12) compared to other developing countries, regional and gender disparities in the field of literacy and so on. However, the fact is that only 5% of the population of 19-24 age has acquired some skills through vocational education, when the corresponding figure for a country like Korea is as high as 96 %. (Twelfth 5 Year Plan, 2012-17 on Social Sectors, Vol 3). Therefore, it is an urgent need to have a democratisation of education to increase the GER so that everyone can get equal opportunity in education without any bias and differentiation.

The North Eastern part of India is one of Asia's great natural and anthropological reservoirs and is often obscured from the outside world by dense forests and formidable mountain ranges. This region shares borders with countries like Bhutan, China, Myanmar and Bangladesh, and is a beautiful collision zone of different tribal cultures, climates, landscapes and peoples. Today, eight states constitute India's North East that contains 8 % of India's total size, and covers an area of 2,62,230 sq. km., with a total population of 38,857,769. (Census 2011) When the total literacy rate of India is 74.04 %, the total literacy rate in the six states of North East India (Mizoram 91.58%, Tripura 87.75 %, Sikkim 82.20%, Nagaland 80.11 %, Manipur 79.81 %, and Meghalaya 75.48% respectively) is higher than the national average except in the two states—Assam (73.18%), and Arunachal Pradesh (66.25 %). However, the rate of adult literacy in the NE Region is much higher than the other states of India. The youths of the age group of 25-35 in the NE are self-employed in non-agricultural activities (12-14%), whereas the all India rate for the same is 7.3 % only.

But despite having a higher literacy rate and work-force, the higher educational institutions are unable to cater to the needs of this work force. For example, the state of Assam has the lowest GER (13.4 % as per MHRD Report 2012-13) compared to other North Eastern states followed by Tripura (13.6%). Although the average GER of North East is higher than the national average, the present GER has failed to translate into higher employability or productivity. Presently, in the North East India, there are only 8 Central Universities, 6 Institutes of Technologies including 1 IIT, 1 IIM, 2 NITs. Besides, these institutes, there is a Regional Centre of IGNOU, one State Open University and several Directorates of ODL institutions. But, the number of such institutes is comparatively very less against the population of this region. An Indian state like West-Bengal, which is adjacent to the North East Region, has more educational institutions than the NE Region as a whole. In the absence of educational avenues, employment, economic independence, the frustrated youths of this region are resorting to different anti-social activities like drug abuse, human trafficking, insurgency, and other social ills which may further affect the growth of a healthy society in this part of India.

Need of ODL for Creating Open Knowledge Movement through OER

It is important that the NER Vision statement 2020 gives special attention to region-specific needs in the educational sector. It aims to bridge the gap between different geographical areas, in terms of health-related facilities. The Report also recognizes that around 80% of job creation is still in the agricultural and allied sectors, and hence, there is a need to promote and build entrepreneurial capabilities and provide vocational education to diversify the employment opportunities especially to

the youth. But a developmental strategy based on the resources of the region calls for an enhancement of skills among the young population. Since, it is also important to develop people's capacities to equip them to participate productively in economic activities; capacity building of institutions should address societal needs on priority basis. Creation of education and training facilities for the youth of the Region in different pertinent areas would provide a great impetus in generating employment opportunities for the youth.

But the high literacy rate in the region, has not translated into any kind of employability in productive occupations. At present, the educated youth have very few opportunities for expanding their horizons and realising their potential, as the focus of the very few higher educational institutions has been to prepare the youth for routine government jobs. Besides, while there has been a tendency to emphasise general subjects in higher education, vocational education has not yet found the required focus. But, skill-development is extremely important to expand people's employment opportunities in the manufacturing and tertiary sectors. For example, training in nursing can expand productive employment opportunities for the women in the region. Thus, through different sorts of need-based training, the people of this region can be gainfully employed in a variety of areas like agro-processing, horticulture, handicrafts, information technology, paramedical science, biotechnology, aviation, entertainment and hospitality industries, tourism and so on. However, the increase in the number of higher educational institutes in this region in the last few years provides an ideal opportunity to gear higher education towards creating value in society.

But, when there is a need to address the wants of the people in a positive direction and to make them vibrant human capital, education in the context of NE India is supposed to be need-based. Therefore, apart from the conventional system of education, ODL and Open and Distance E-Learning (ODEL) systems have been adopted for starting a new frontier for socio-economic development in the state. By launching various general, professional and vocational courses, the ODL system has provided educational opportunities to those who are deprived to get education due to various constraints. In this regard, the National Knowledge Commission of 2005 rightly stated that the appropriate application of knowledge in agriculture can play a major role in boosting the agrarian economy and giving the Indian farming a competitive edge in the global market, and ODL institutes can play the pioneering role for that. Commonwealth of Learning (COL) also has demonstrated that by using Information and Communication Technology (ICT) and flexible and blended learning approaches, access to quality technical and vocational skills development can be increased which can further help to overcome the urban-rural and gender divides that exclude learners from skills training to create a skilled workforce of life-long learners for the growth of informal and formal economies. But, the call for setting up of new public institutions, increased public spending on education and other social sectors etc. can be best realized through the production of OERs which can make the best use of the money received from the public for the public. Thus, the ODL mode of education, through the use of OERs, has the potential to create the knowledge-movement in every aspects of human life in society in general.

The OER Movement in India

For the greater interest of the general public or the stakeholders, the use of OERs has presented itself as the most viable option to disseminate knowledge and information in the whole of India. The historical and functional definition of OER, as has been pointed out by UNESCO in 2002 is: "Technology-enabled, open provision of educational resources for consultation, use and adaptation by a community of users for non-commercial purposes...typically made freely available over the Web or the Internet." (Kawachi 2013) In India, where higher education usually benefits only a small section of the people, because of its being a very costly affair, OERs have provided myriad opportunities to enjoy the benefits of education even without going to an educational institute. Of late in India, the initiatives taken under MOOCs have pushed the OER movement to a significant height in recent times. With the help of the different Community Information Centres, NGOs and other Social and Government Organizations located at different parts of the country, educational institutions may use OERs that can enlarge teaching experiences, expand the reach of education, and make learning

possible through participation and from multiple sources at the same time. Of late in India, following the National Knowledge Network Project, various courses have been launched, particularly by the ODL institutions, which became instrumental in training people mostly in the field of agriculture and small-scale industries for a better socio-economic growth of India. Thus, OERs can be seen as an evolving pedagogy in the context of present-day India.

The Role of KKHSOU in Accelerating the Open Knowledge Movement through OER

In the context of higher education in the NE Region of India, the role KKHSOU has played in its 9 years of existence as the only State Open University, has confirmed that a university is a public property, and that it can take bigger responsibilities in encouraging the 'pedagogy of the oppressed' in a technology-aided educational environment. KKHSOU has played a leading role by enrolling over 1,50,000 learners in different disciplines since the time of its establishment in 2006. KKHSOU is not only trying to identify the need of various stakeholders, but is also making them producers of valuable e-contents by trying to engage them in a variety of collaborative activities like producing audio-visual contents on areas like agriculture, small scale industries, mobile phone repairing and so on. It has been also producing important educational resources in local languages to meet local requirements. Till now, the university has uploaded around 100 videos on the YouTube which can be accessed through www.youtube.com/user/kkhsou. In addition to the traditional programmes, KKHSOU has been offering various need-based certificate and vocational training programmes on Computer application, Two/three wheeler repairing, Electrical House Wiring, Apiculture, Garment Designing, Scientific Tea Cultivation, Commercial Poultry Framing and so on. Besides, with the help of the different polytechnic institutes, situated at different parts of the state, this university has been successfully offering vocational training courses on areas like Welding, Plumbing, Electrical House Wiring, Repairing of Electrical Home Appliances, Cutting and Tailoring and so on, and encouraging the youths to develop self-entrepreneurship to take up various jobs. The courses have been being imparted through telecast, radio broadcasting and audio-visual programmes in the form of CD and DVD.

KKHSOU is also one of the few North East Indian universities which recently signed an MoU with the National Skill Development Corporation (NSDC) on introducing skill-based courses in the study centres of the University. Accordingly, a study centre can choose up to two skill sectors in areas like Retail, Automotive, Tourism and Hospitality, Healthcare, Electronic and Agriculture for the learners. This has been yet another welcoming step taken by a new university to have been influenced by a humanistic and holistic goal in education. Besides, linking with the different communities and the youth of the society by undertaking various socio-cultural activities to generate awareness on academic, social, environmental issues etc., and starting various activities on conservation of historical resources as well the biodiversity in the nearby areas of its campus, may be seen as the first ever initiative by a state university in the last 10 years in this corner of India. Keeping pace with the national development, KKHSOU is also considering new certificate and diploma programmes on other vocational areas like Animation, Photography, Counselling, Theatre & Stage Craft, Food Processing, Printing Technology, Packaging, Stress Management, Value based education through Yoga, Handicrafts, Performing Arts and so on. It is expected that soon KKHSOU, by producing contents in the form of OERs in the area mentioned, will emerge as a leading transnational university which will invite national and international collaborations, thus translating many of the visions of this university into a reality. The experience of KKHSOU may be seen as a wake-up call for other premiere institutions of the state to develop their own policies of OERs, and contribute meaningfully to the entire North Eastern Region of India.

Conclusion

Against this background of bringing functional literacy in the whole of NE, the strategic role the ODL intuitions in this part of India have played has been very important. The ODL institutions like KKHSOU, because of its capacity to reach out to more and more people of this region, should be the think-tank to design and offer need-based courses for developing the manpower in the society and utilizing the local and regional resources. Thus, production of OERs on various professional and vocational areas not only for the learners enrolling in them but also for the common masses has been seen as the call of the hour. The educational institutions, run by both conventional and ODL modes, can make the best use of OERs on the basis of available technologies and make knowledge-enabled population in the state a reality and enhance the Open Knowledge Movements by keeping pace with the South East Asian development. With the help of OERs, social justice can be provided to a large extent which may further help in redressing the various social inequalities experienced during social, political, educational, economical, and cultural transformations in a remote place like the North East of India. It is hoped that the experience of KKHSOU will become the harbinger of change in this part of India.

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APPLYING THE MULTIPLE PATHS APPROACH FOR PHILIPPINE BIODIVERSITY OPEN EDUCATIONAL RESOURCES

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Abstract

The University of the Philippines Open University (UPOU) has launched its Massive Open Online Courses (MOOCs) through its Massive Open and Distance eLearning (MODeL) Platform with some of its courses employing the Multiple Paths Approach (MPA). The Multiple Paths Approach is an approach in online teaching that is based on Learning Styles, Personalized Learning Principles, and Website Localization. It considers the different ways by which a student effectively learns in interacting with a learning material as well as using a language for communication in an online course. The implementers of UPOU MOOCs have started to design the courses using the MPA in the creation of Open Educational Resources. Open Educational Resources (OERs) and Open and Distance e-Learning (ODEL) are “two peas in the same pod” in enhancing communication, education and public awareness (CEPA) of individuals, communities, and institutions. Using the affordances of mobile learning technologies and techniques in Responsive Web Design (RWD), this study has the following objectives, 1) describe the process by which the MPA was applied in organizing the OERs for Philippine biodiversity, 2) explain how technological frameworks and tools were used to implement the MPA approach, and 3) evaluate the usability of the platform containing these OERs in desktop and mobile environments among expert and student respondents. This paper outlines how these objectives were achieved. Furthermore, based on the usability test conducted, the platform containing these OERs obtained a system usability score of 72.09. The score is higher than the global median score of 70, which implies that the platform is relatively useful.

Keywords: OER, Multiple Paths, Personalized Learning, Biodiversity





Introduction

The proliferation of Open Educational Resources (OERs) has revolutionized teaching and learning both in the residential and distance modes of education. Because of OERs, teachers have a plethora of resources to use in equipping the new generation to be globally competitive and adaptive in this challenging era. OERs can now be accessed through websites that collect and curate these free and reusable materials aided with the legal empowerment of digital licensing organizations for shareable resources like Creative Commons. The challenge now is to help information seekers find the materials that they need for teaching and learning effectively. There are many ways in which OERs can be organized in a platform. However, the OER provider and curator should be able to choose an approach that would fit the OERs’ domain, objectives, and target users.

A Multiple Paths Approach

The idea of multiple paths is not new as many educators are already subscribing to the notion of learning styles, learning paths, and personalized education. Various competing and complementing theories and models explain and describe the different ways in which an individual learns. There are two models that this study mainly draws from. The first one is the model of Learning Modalities by Walter Burke Barbe and his collaborators. They concluded that students learn effectively through one or a combination of the Visual, Auditory, and Kinesthetic modalities (Barbe, Swassing, and Milone, 1979). It is often called the VAK model for brevity. Fleming expanded this into four learning modalities when he introduced the VARK model (Leite, Svinicki, and Shi, 2010). In his model, he classified individuals as visual, auditory, read/write, and kinesthetic learners. Read/write learners prefer reading and writing text to learn while auditory learners absorb lessons by listening to live or recorded lectures. On the other hand, visual learners effectively grasp information by viewing images like graphs, charts, illustrations, pictures and videos. Kinesthetic or tactile learners are tagged as experiential learners who learn best by doing. Hopkins (2013) conveniently illustrates this model in Table 1. Like the rest of the learning style models, the two aforementioned drew flak from various academics and psychologists to the extent of even pertaining to one of them as a myth (Lilienfeld, Lynn, Ruscio, and Beyerstein, 2011).

Table 1: The VARK Model as Illustrated by Hopkins (2013)

Preference	Best satisfied by	Examples
Visual	information in a graphical form (diagrams, charts, symbols)	
Auditory	information in a spoken form (listening and speaking)	
Read/Write	information displayed as words (reading and note-taking)	
Kinaesthetic	information through experiences (hands-on, tactile activities)	

Despite this, the notion that individuals have different preferences and styles in learning did not die down. In fact, it was even extended with the emergence of learner-centered approaches that eventually led to the relatively new concept of personalized learning whose working definition was posted in Education Week in October 2014. This learning approach basically considers designing a particular curriculum for each learner depending on factors extracted from their learning profiles. The collaborators have identified attributes that describe personalized learning as they tried to work towards a standard definition. These attributes include but are not limited to competency-based progression, flexible learning environments, personal learning paths, learner profiles, ongoing assessment, operational alignment, personalized learning plans, individual advancement, time allocation, space utilization, varying modalities, and varying motivations (Cavanagh, 2014).

To easily describe this, Mia MacMeekin (2014) created a descriptive infographic summarizing this approach as illustrated in Figure 1.

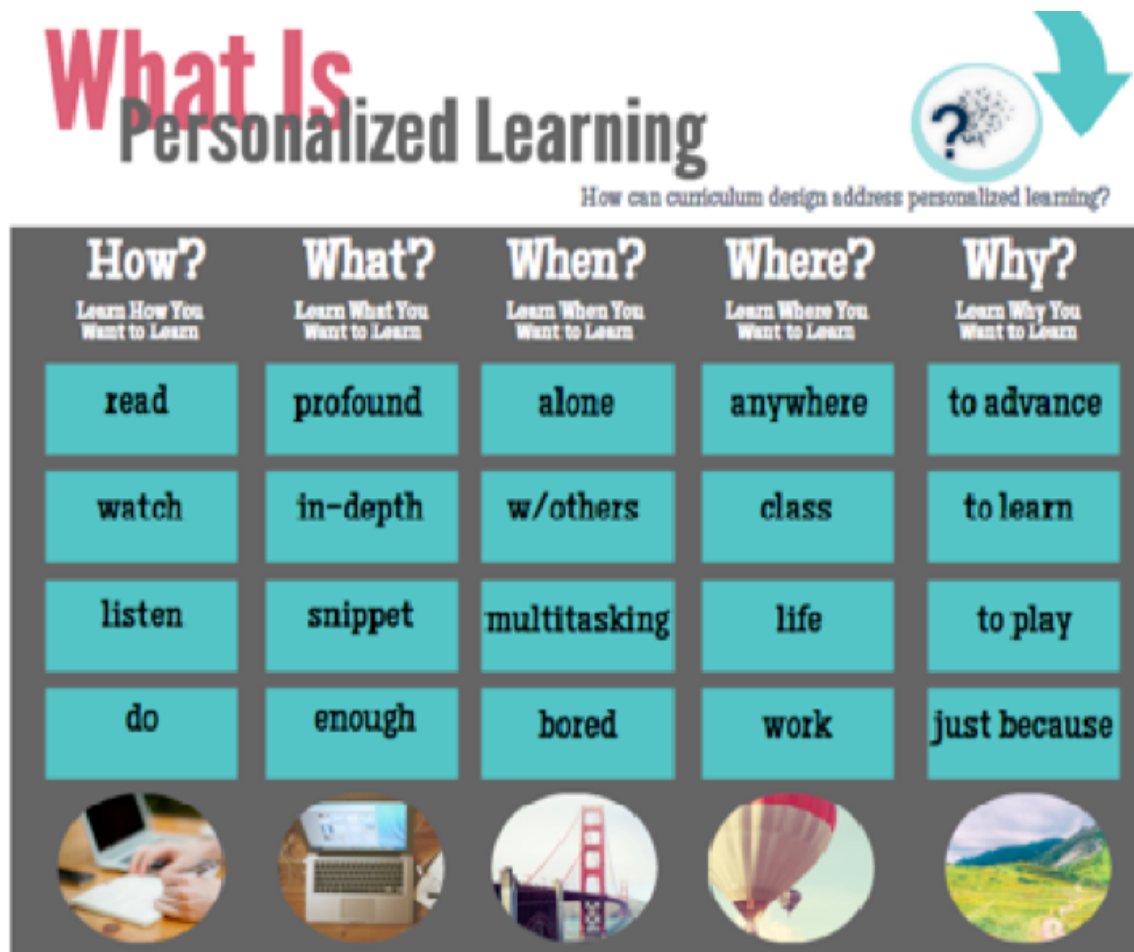


Figure 1: Mc-Meekin’s Infographic on Personalized Learning

Multiple Paths as Applied to Massive Open Online Courses (MOOCs)

In a bid to increase student retention and course completion in Philippine-based MOOCs, the University of the Philippines Open University (UPOU) conducted a design thinking workshop to formulate an approach in offering its own MOOCs. The discussants and planners drew from the aforementioned models and approaches while adding another dimension: Language. In the Philippines, there are two official languages, Filipino and English, but the *lingua franca* is English. However, to make the courses more open to the Filipino demographic who are less equipped or confident in the English language, the implementers planned to offer relevant sections of MOOCs and OERs in Filipino..

These two dimensions made up what was then called the Multiple Paths Approach (MPA), as illustrated in Figure 2, where one label represents the modality chosen by the individual for learning a certain course’s component, and another represents his or her chosen language. This approach is now being integrated in some of the current and future MOOCs from the UPOU. This effectively dictates how OERs for these MOOCs are also designed and organized.



Figure 2: The two dimension of the Multiple Paths Approach

Philippine Biodiversity and OER

The Philippines is recognized as one of 17 megadiverse nations of the world where collectively, two-thirds of the world's living organisms are found. Being the second smallest of the 17 megadiverse nations (Figure 3), it is also a biodiversity hotspot due to threats of extinction and habitat destruction.

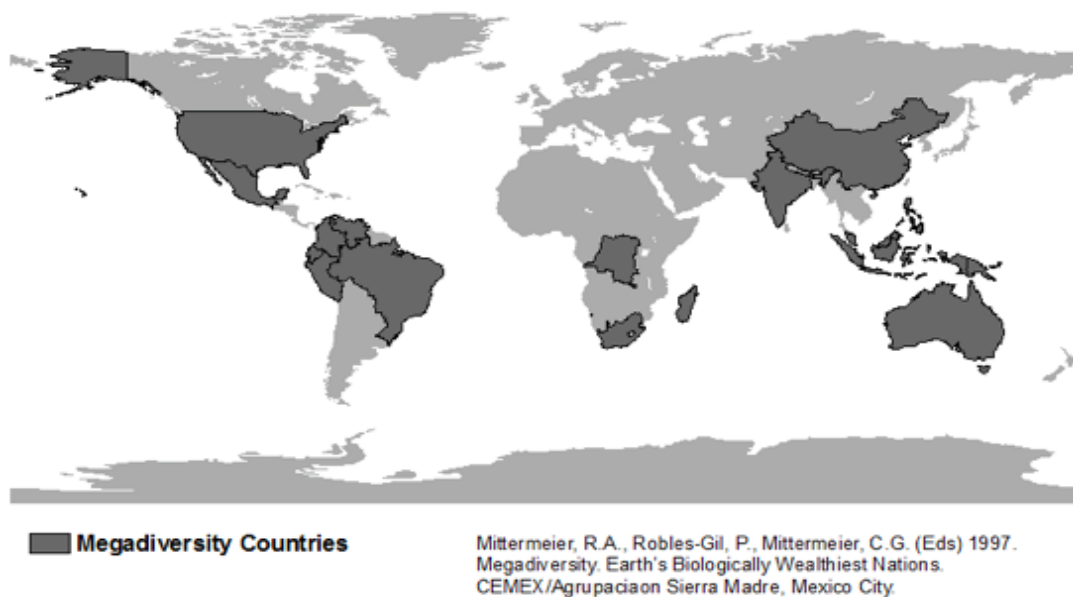


Figure 3: Megadiversity countries of the world

The archipelagic geography in a tropical climate of the Philippines provides numerous unique habitats for organisms only found in these island settings. Thus, Philippine biodiversity is an encompassing term that includes genetic, species and habitat or ecosystem diversity that are equally important at various scales of study. There are the Philippine endemics whose distribution is found from the north to the south islands of the Philippines. The Philippine eagle is an example of a Philippine endemic. There are also species unique to a specific biogeographic region whose boundaries have been demarcated since the Pleistocene epoch (Figure 4) such as the Benguet pine which is only found in the Greater Luzon biogeographic region. Finally, there are the island endemics, species that are only

found on specific islands of the Philippines such as the tamaraw which is only found in the upland grasslands of Mindoro island. Hence, the rapid loss of habitats for these unique island endemics in small islands is a grave cause of concern.

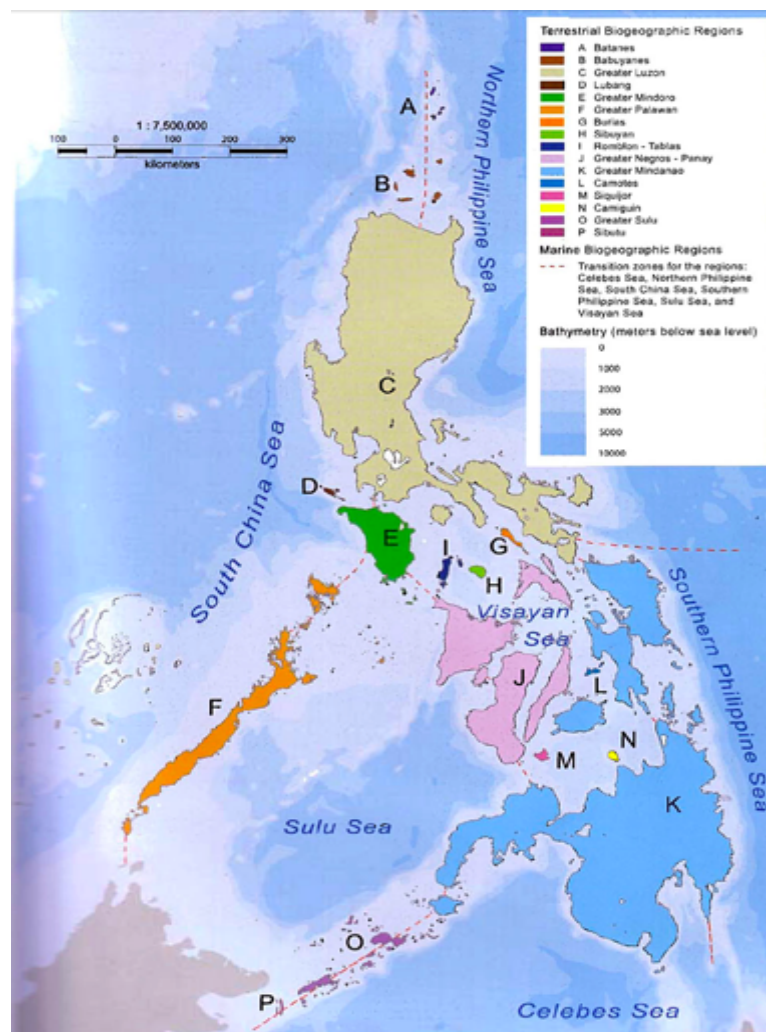


Figure 4: Biogeographic Regions of the Philippines

The protection and conservation of Philippine flora and fauna hinges on communication, education, and public awareness (CEPA) of individuals, communities and institutions. Biodiversity information about Philippine flora and fauna should be made available for school children, their teachers, families and communities for effective management and conservation. In this digital age, open educational resources (OERs) or “technology-enabled, open provision of educational resources for consultation, use and adaptation by a community of users for non-commercial purposes (UNESCO, 2002) and Open and Distance e-Learning (ODEL) can enhance CEPA of Philippine biodiversity. The creation of OERs on endemic Philippine flora and fauna is one way of contextualizing and disseminating biodiversity concepts for local communities and schools. The UPOU, as the Center of Excellence for ODeL in the Philippines, can lead the development and use of these educational technologies in promoting more effective conservation of Philippine biodiversity where access to information can be made available through the swish of a finger on mobile devices. In view of eventually using these OERs in a MOOC, the MPA is considered as an approach for organizing these resources.

Statement of the Problem

In preparation for ASEAN integration, the Philippines embarked on the addition of two more years (Year 11 and 12) to its basic education curriculum. Using the concept of a "spiral curriculum," the same topics are encountered for each year but with increasing complexity (Bruner, 1960). Education experts have decided to assign biodiversity concepts to the Grade 8 curriculum with a total of four hours in a school year devoted to it. The Grade 8 curriculum on biodiversity is presented in Table 2.

Table 2: Grade 8 Curriculum on Biodiversity

Content	Content Standards	Performance Standards	Learning Competencies
Species diversity Hierarchical taxonomic system of species Protection and conservation of rare and economically important species	demonstrates understanding of the concept of a species as a reproductively distinct group of organisms. demonstrates understanding that species are further classified into a hierarchical taxonomic system (domain, kingdom, phylum, class, order, family, genus, species)	initiates and participates in activities that protect and conserve rare and economically important species	explains the concept of species as a reproductively distinct group of organisms classifies organisms using the hierarchical taxonomic system (domain, kingdom, phylum, class, order, family, genus, species) based on structure and function explains the advantage of high biodiversity over low biodiversity

With such a short time devoted to the study of biodiversity and compounded by the problems of the Philippines being the hottest of the biodiversity hotspots due to habitat loss, deforestation, land use change, and climate change, it is imperative that OERs on Philippine biodiversity be made available for students, teachers and local communities as conservation begins with local knowledge, concerted commitment and action. These OERs should be accessible and organized through a platform that will cater to Filipino learners of different learning styles and languages. These challenges served as bases for agreeing on the objectives of this study.

Objectives of the Study

This study aims to:

1. Describe the process by which the MPA was applied in organizing the OERs for Philippine biodiversity,
2. Explain how technological frameworks and tools were used to implement the MPA, and
3. Evaluate the usability of the platform containing these OERs in desktop and mobile environments among expert and student respondents.

Methodology

Planning and Curating OERs

According to Kanter (2011), "Content curation is not about collecting links or being an information pack rat, it is more about putting them into a context with organization, annotation, and presentation. Content curators provide a customized, vetted selection of the best and most relevant resources on a very specific topic or theme."

For this study, content was created by a pool of biodiversity experts. These content experts were tasked to provide materials suitable for both teachers and students in the Grade 8 of the present high school curriculum. The content was then submitted to the developers for website inclusion. The resources were evaluated for usefulness, soundness, and educational value by an instructional designer.

Development of Mobile-Friendly OERs

Before developing the website, the *mobile-first* perspective was considered by the designers as it was intended to be accessed not only by sedentary users, but also by mobile ones. In order to achieve this, the following tools and approaches were utilized.

1. Responsive Web Design

At first sight, OERs and mobile devices would not have much to do with each other. However, nowadays, mobile devices are rapidly replacing normal computers in creating and using educational resources.

Repositories or storage areas for educational resources are growing in numbers on the Internet. These can be searched using a web browser and can be incorporated into one's own educational materials. Arranging and processing materials and resources to create new publications are almost always done with a regular computer. More often than not, open content is not suitable for use on mobile devices. For instructors and teachers, this is difficult and cumbersome. Incompatibility of file formats and the limitation of smaller screens of mobile devices are some of the reasons for this perceived difficulty. Moreover, most commonly used authoring tools often lack support for mobile devices. Nonetheless, the challenge for OER providers in general is to encourage use of content that are mobile friendly.

In this regard, responsive web design (RWD) is useful. RWD is one of the revolutionary and web design trends nowadays. Its usage has grown due to the increasing ownership of smartphones, tablets and other related devices. More people are now using mobile devices to access materials on the Internet than those getting online using desktops and laptops. RWD is a set of techniques that allows a website to automatically adapt to different screen sizes, from widescreen desktops to tiny smartphones. It also simplifies page elements for mobile use and resizes images to suit various screen resolutions. RWD is widely used to build an ideal viewing experience. It is also used for easy reading and navigation regardless of the type of device used to access it.



Figure 5: Illustration of responsive web design (Cyberchimps, n.d)

2. WordPress as the OER Repository

WordPress is a content management system (CMS) that allows users to create and manage website content without requiring them to know the intricacies of web programming. Moreover, WordPress also supports responsive web design, so as to render mobile-friendly versions of the sites whenever mobile devices are used to access the sites. In the past, educators from the UP Open University have created web-based learning resources using WordPress. In this study, Philippine biodiversity OERs were organized and published using this tool.

The developers and webmasters organized the content using the Responsive Web Design approach by utilizing a free and open source theme, to make digital content easily viewable and readable in most screen sizes of devices that could access the Web. The website can be accessed using this URL: <http://www.learnbiodiversity.com>.

Categories were utilized to organize the resources into main resources and other media forms such as videos and audio to prepare the platform for podcasting and videocasting. Tags were utilized for taxonomies and other keywords to make searching easy.

3. Android Development

Even though the website can easily be viewed using any mobile browser, an Android app was developed to make it more mobile-friendly and portable. This Android app has a container created to port the website in and make it viewable using a Native Android file, which referred to as Android Application Package (APK). The APK file needs to be downloaded first and installed on the mobile device before the app can be used. Several features were also considered in developing the app for enabling offline syncing and IOS compatibility. An in-depth discussion of this can be found in a study conducted by one of the authors (Pugoy, 2015).

4. Plug-ins for MPA

Finally, tabbed panes were used to segregate resources for endemic species. In order to implement the MPA, modality symbols were displayed in each tab to notify learners if that tab is suitable for visual, textual, auditory, and kinesthetic learners through icons representing text, pictures, videos, sound files, and instructions for experiential learning. The plugin called *Tabby Responsive Tabs* was utilized to implement this. A screenshot of a sample resource displaying the tabs is shown in Figure 6.

Philippine Hornbill

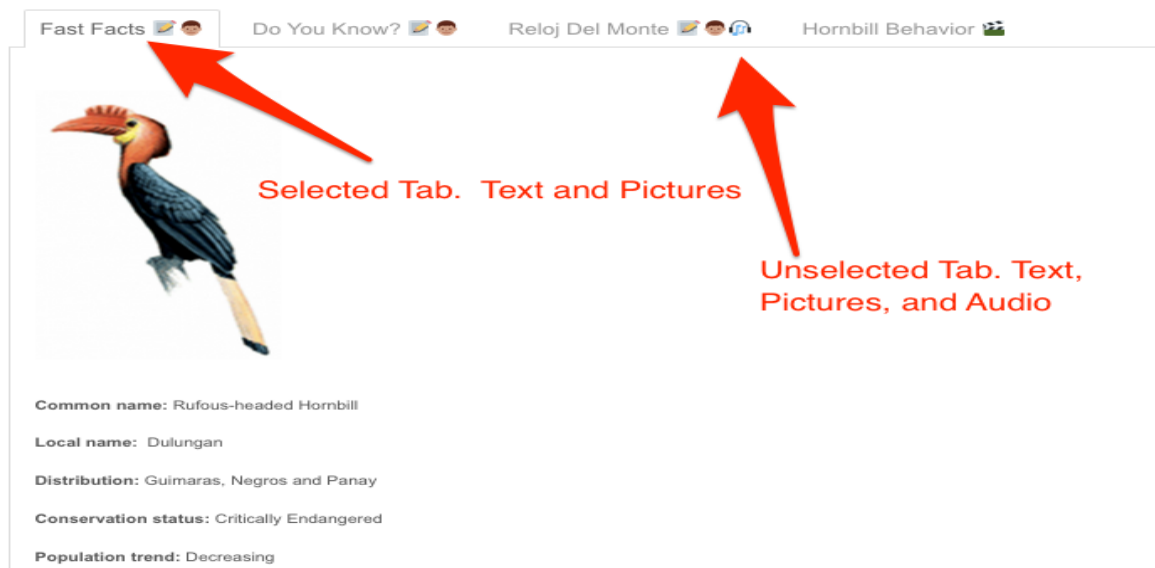


Figure 6: A Sample of the Tabbed Panes Structure of OERs for one species

Filipino translation of the website and applicable resources was implemented using a website localization and language switching plugin called *Polylang*. This plugin enabled the developers to provide Filipino text for each element in the website's frontpage, menu, widgets, and articles. Because of this, changing the resources' language can be easily achieved by clicking one of the flags in the menu. Figure 7 shows the frontpage of the Filipino translated website after clicking the Filipino icon symbolized by the Philippine Flag.



Figure 7: A screenshot of the Filipino translation of the frontpage

Prototype Evaluation

To measure the viability of this solution, a prototype was rapidly developed and evaluated. This was considered to be the first cycle. After which, changes based on the results were incorporated in the next prototype, which comprises part of the second cycle. The first prototype was developed in 2014 and was evaluated in terms of usability through surveys answered by 32 random users. Though the results were satisfactory, the developers wanted to enable the platform to accommodate more users by allowing offline syncing and the Multiple Paths Approach. The second cycle ended with perceived learning style and usability surveys distributed to 154 testers.

Results and Discussions

Out of the 154 respondents, 45% perceived themselves to be kinesthetic learners, 39% claimed that they consider themselves to be visual learners, 10% see themselves as textual learners, 3% believed that they were auditory learners, and another 3% believed that the classifications did not apply to them. After conducting a System Usability Scale (SUS) survey, which is a widely used instrument for testing usability, a usability score of 72.09 was obtained. Figure 8 outlines the statements in the SUS survey. The detailed process of computing the SUS score was not explained in this paper for the sake of brevity. However, for those interested, a detailed description of the process was included by Pugoy (2015) in an accompanying study that also pertains to this platform. The final score was achieved by averaging the usability scores of the system being accessed across various devices. The global median for SUS is 70, which makes the platform a relatively usable system compared to most existing systems. Only a few (12%) of the users encountered errors, which were mostly caused by internet connectivity issues. The users were also asked if the organization of the materials supported their learning style. Majority (92%) answered positively and attributed their affirmation to the ease of navigation and straightforwardness of both the website and the mobile app. The 8% mostly attributed their negative responses to the bugs that they have encountered while accessing the website through their mobile devices.

	1	2	3	4	5
I think that I would like to use this system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I found the system unnecessarily complex	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I thought the system was easy to use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that I would need technical support to be able to use the system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I found the various functions in the system to be well integrated	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I thought that there was too much inconsistency in this system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I could imagine that most people would learn to use this system very quickly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I found the system very cumbersome to use	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt very confident using the system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I needed to learn a lot of things before I could use this system effectively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 8: Usability test items based on the System Usability Scale

Summary and Conclusion

Philippine biodiversity plays an important role in the provision of ecosystem goods and services but more importantly, the archipelagic geography in a tropical climate setting provide a number of unique habitats that a large number of endemic organisms call their home. The rapid loss of these habitats is a source of concern and the provision of biodiversity information to students, teachers, local communities and institutions is an important step in arresting this decline. Protection and conservation should be addressed at the local, regional, and national levels. The creation of OERs on Philippine biodiversity was made by biodiversity experts. The materials are then organized and presented in a platform that was developed using the Multiple Paths Approach and Responsive Web Design principles. The results show that the OER platform was usable and helpful in addressing the learning styles of the users. Hence, it can be concluded that the project has big potential in being used for the teaching of Philippine Biodiversity in Grade 8 classrooms in the succeeding academic year. Moreover, a third prototype is being planned to enable podcasting and videocasting for remote learners, as well as address the suggestions and comments of the testers.

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ACCEPTANCE OF OPEN DISTANCE LEARNING: AN EXPLORATIVE STUDY OF BRUNEI EXPERIENCE

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Abstract

The revolution of information technology has significantly changed the landscape of teaching and learning. Mode of Open Distance Learning (ODL) has been identified as one of the most effective ways to provide an alternative in education. The establishment of Open Universities is the main player for this mode of learning. The ASEAN countries have undertaken this opportunity to develop its open university applying the same concept, such as University Terbuka (UT), Sukhotai Thamamathirat Open University (STOU), University of Philippines Open University (UPOU) and Hanoi Open University (HOU). Nevertheless, there is a few of ASEAN countries that are still do not have its open universities. For example, Brunei. Hence, in this study, it will investigate possible factors that affect Brunei's acceptance of open distance mode. Among the factors that will be investigated are education policies and barriers. The descriptive qualitative research method is utilised to analyse these variables. In-depth interview and documentation analysis are used to carry out this study. The results of this study might give an insight of the reasons ODL still not fully accepted in Brunei.

Keywords: *Open Distance Learning, Education Policy, ASEAN countries, Open University*

Introduction

Open Distance Learning or better known as ODL has been implemented with the some considerable success in developed countries as well as developing countries. The term reflects both the fact that all or most of the teaching is conducted by someone removed in time and space from the learner, and that the mission aims to include greater dimensions of openness and flexibility in terms of access, curriculum or other elements of structure (UNESCO, 2002). In other words, education and training are using the learning resources, rather than attending classroom sessions, is the central feature of the ODL experience (Commonwealth of Learning, 2003).

In the 21st millennium, ODL system is proven as potential benefits universally. Yet, the education delivery in Brunei Darussalam is still exclusively based on a formal conventional system of education. Undoubtedly, these circumstances happen partly attributed to its smallness in terms geographical area whereby all points in and around the country are accessible, and the education can be provided and delivered through conventional method. In addition, the small population and stable economy possessed by Brunei has allowed this country to provide favourable and accommodating educational infrastructure, as well as set out policies that allow opportunities for Bruneians to access education through the conventional way. Evidently, ODL thus far has not established any significant inroads as alternative modes of accessing education in Brunei Darussalam.

Objective of the Study

The objective of this study is to investigate factors that might affect Brunei's acceptance of ODL mode of teaching and learning. This study also explores educational policies of Brunei Darussalam and barriers that might have impacted the acceptance of ODL and the establishment of Open University in Brunei. The findings of this study would provide a further understanding of Brunei's education policies and some insights from the Brunei Ministry of Education on ODL.

Research Questions

To achieve the study objective, the following research questions are formulated:

- (a) To what extent does the ODL been accepted in Brunei's educational policy?
- (b) What are the barriers that Brunei might have in accepting ODL?

Literature Review

Several studies have been conducted on the education system in Brunei. Ampuan Haji Brahim (2013) in his paper entitled "National Education System for the 21st Century: Issues and Challenges in Brunei Darussalam" was focusing on the philosophy of *Melayu Islam Beraja* (MIB) (Malay Islamic Monarchy). The subject of the Malay Islamic Monarchy is used as the core subjects, along with the Malay language, Islamic Religious Knowledge, Mathematics, and Science. However, according to this author, among the issues and challenges faced in the Brunei education system are to strengthening the national philosophy of the Malay Islamic Monarchy itself, in particular the use of the Malay language, and the shortage of teachers as well as books on the philosophy of the country (Ampuan Haji Brahim, 2013: 207). He reiterated that, with the support of HRH (His Royal Highness) and the responsibility of all citizens of Brunei Darussalam, the National Education System for the 21st Century will be able to achieve its intended goals and objectives, particularly in maintaining and strengthening the national philosophy of the Malay Islamic Monarchy.

Meanwhile, Rasani Hamid (2000) has discussed the historical evolution of the education system and education institution from past to present. In the article published in the Journal of Southeast Asian Education, he looked into socio-economic indication and projection and how these factors have impacted on education institutions as well as the demographic indicators to give the Ministry of Education the trainings in bearing the needs to meet the human asset prerequisites of the nation. In fact, his research also dealt with the education policies' aims and goals from pre-primary level to the post-secondary level.

However, recently, the concept of ODL has come into the picture in Brunei, especially when other ASEAN countries have implementing and practising this mode of learning. According to Omar Haji Khalid (1992), among the reasons ODL is starting to get support in Brunei are: (i) adults do not have to leave their job to take up part-time studies; (ii) the system is flexible to overcome some of the time constraints of adults; (iii) the system in its basic form without the full range technology can function at reasonable cost; (iv) the available materials that can be adapted for local use at reasonable cost; (v) learning takes place within one's culture and course content is relevant to local requirement; and (vi) the cost of educating adults, at a local learning institution, is most likely to be much cheaper than sending him or her to an overseas institution, particularly when, in the absence of that person, another person must be contracted to do his or her work. Furthermore, based on the findings of Omar (1992) in his master thesis entitled "The development of open learning system in Brunei", ODL should be practised due to; (i) there is a need for an opening learning system in Brunei Darussalam; (ii) an opening learning system is suitable in Brunei; and (iii) it is feasible to develop the concept of an open learning system that meets the learning needs of adults in Brunei Darussalam.

Thus, if compared with Malaysia and Brunei, both countries fall far short of the ideal of equitable ethnic access to education because it discriminates the “native” ethnic groups. For the ethnicity education to succeed in strengthening the national integration in both nations, ethnic bias in the curriculum content should be eliminated and discriminatory ethnic policies dismantled (Loo, 2009).

Methodology

This is a qualitative research with data collected through documentation analysis and in-depth interviews. Representatives from several departments in the Brunei Ministry of Education were interviewed to get more information on the educational policies, higher education’s background and how is the system works.

Significance of the Study

This study is significant as the research findings obtained are expected to provide some insights about the perceptions of Brunei Darussalam government agencies towards ODL, Open Universities and other aspects related to education. Besides, the findings also can be used for Brunei and other ASEAN countries to collaborate in any programme that applying the ODL mode, or complementing each other in ensuring the success of ODL practising.

Discussion and Findings

Education System

Brunei has developed a good education system under the administration of its Ministry of Education. According to the Education Act of 1984, all public and private schools were placed under the surveillance of Education Ministry. Brunei's financial reserves are reportedly more than \$30 billion. Rich with oil and natural gas resources, Brunei had given free education to its people from the kindergarten up to tertiary levels, both domestic and abroad. Besides, Brunei also made education compulsory for everyone, from 5 years to 16 years of age. The development of the education system had improved clearly in 1995, with almost 95% children enroled in primary schools, and 68% of them eligible to pursue their studies in the secondary schools. In 1996, there were 160 primary schools with 432,941 students, and 30,470 students in the secondary schools with 2,961 teachers. The literacy level had improved from year to year. Here, literacy means, a Brunei national of 15 years and above can read and write. In 1971, the literacy level had increased from 69% to 80.3% in 1981. In 1991, it went up to 89.2% to 93.1% in 2001. Later on, in 2005, the literacy level had increased from 95% to 96.3% in 2010. It also marked the highest literacy level for adults; that was 99.6% in 2011. This was mainly because Brunei has highest GDP per capita in the world (Central Intelligence Agency (CIA) The World Factbook: Brunei, 2015).

Melayu Islam Beraja (MIB)/Malay Islam Monarchy

The state has formulated its national philosophy of Malay Islam Monarchy based on Brunei’s historical background. Informally, the philosophy of Brunei “Malay Islam Monarchy” is believed to have been in existence in the early 5th century of CE, when Islam first came to Brunei, and the religion was officially and openly practiced when the first King Sang Aji Awang Alak Betatar converted to Islam. The majority of Bruneians are Malay, and the Malay language is widely spoken among the races. The monarchy system is based on inheritance and has been adopted into the life of the Bruneian people from the 14th century until the present day. Consequently, the MIB philosophy reflects the nature and identity of the Brunei state. The proclamation of this philosophy was made official by His Majesty Sultan Haji Hassanal Bolkiah Mu’izzaddin Waddaulah on the 1st January 1984, at the moment when Brunei Darussalam declared its independent and sovereign status.

This philosophy has become the nation's formal guiding light and a way of life for the Bruneian people. It is a blend of Malay language, culture and customs, the teaching of Islamic laws and values and the monarchy system. The nation hopes that the state's philosophy will be adopted in any national changes and activities (<http://www.brunei.gov.bn/government/mib.htm>). This inevitably includes any changes or formulations involving the Brunei's educational system. Furthermore, Brunei educational policy is developed based on the needs of human resource and mandated given by the Sultan in any official occasion done in Brunei. All the suggestions or mandates given by Sultan in his speech will be considered in developing relevant policies included the educational policy.

Tertiary Education

For any country in the world, education is of quintessential –for, without education, there would be no development in the country. Education is not merely for knowledge, but quality education would change society from poverty, diseases and labour exploitation. This happens when people are provided with knowledge, skills and confidence. Based on the current trends, many countries in the world are working on increasing the level of education in their countries. This includes Brunei Darussalam with its Vision 2035 in the education aspect, as stated in their Report of National Education for All (2015):

“By 2035, Brunei Darussalam as a nation is to be recognised ‘for accomplishment of its educated and highly skilled people as measured by the highest international standards; quality of life that is among the top 10 nations in the world; and a dynamic and sustainable economy with income per capita within the top 10 countries in the world’.”

Brunei Higher Institutions

No.	Higher Institutions	Technical & Vocational Institutions	Colleges
1.	Universiti Brunei Darussalam	Pengiran Anak Puteri Rashidah College of Nursing	Laksamana College of Business
2.	Universiti Islam Sultan Sharif Ali (UNISSA)	Sultan Saiful Rijal Technical College	Micronet International College
3.	Institut Teknologi Brunei	Jefri Bolkiah College of Engineering	Bicpa-Ftms Accountancy Academy
4.		Nakhoda Ragam Vocational School	Cosmopolitan College Commerce & Technology Sdn. Bhd. [CCCT]
5.		Mechanic Training Centre	International Graduate Studies College [IGS]
6.		Business School	Kemuda Institute
7.		Wasan Vocational School	Bql College Sdn. Bhd.
8.		Sultan Bolkiah Vocational School	Focus Computer School

Source: Ministry of Education Brunei Darussalam (2008)

The tertiary education system of Brunei started after the country achieved its independence in 1984, when Universiti Brunei Darussalam (UBD) was established in 1985 with the enrolment of 176 students. UBD offers diploma programmes, degree programmes, Master and Doctor of Philosophy. The tertiary education system further developed in 1986 when Institut Teknologi Brunei (ITB) was established in January 1986 and upgraded to a University status in October 2008. In 2007, Sultan Sharif Ali Islamic University (UNISSA) was established and focuses on the development of courses such as the Arabic Language, Islamic History and Civilisation, Islamic Law and Islamic Finance.

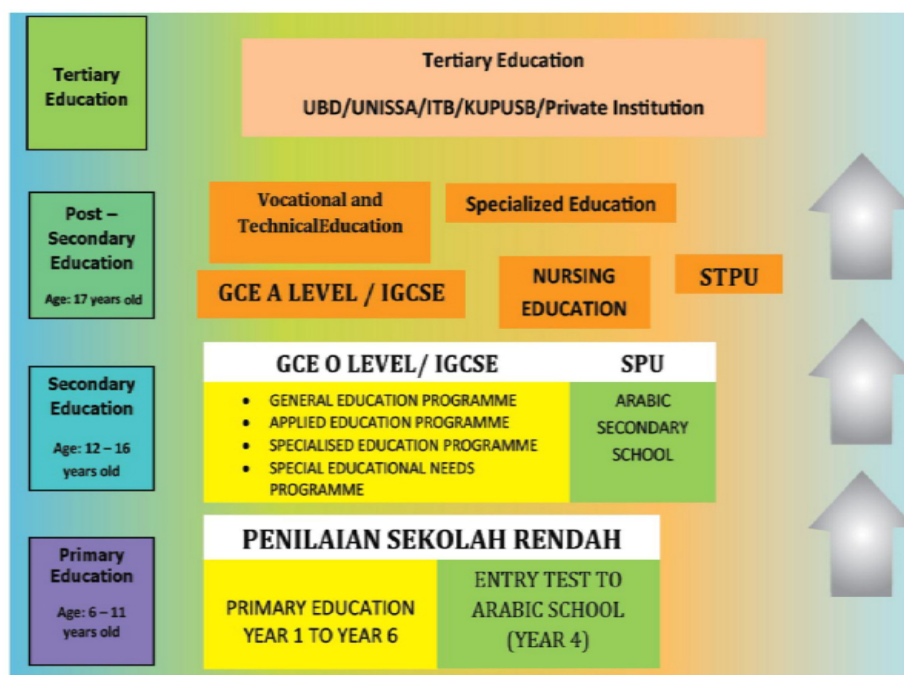
Brunei Darussalam also has an institution to train teachers for Islamic Education known as Seri Begawan Religious

Teachers University College (KUPU SB) was established in 1975. In 2007, KUPU SB was upgraded to a university college. KUPU SB was put under the jurisdiction of the Ministry of Religious Affairs and had developed and offered programmes at the diploma, higher national diploma, post-graduate diploma and undergraduate courses, including the Master degree in Islamic teaching.

Educational Policies

In January 2009, the Brunei Ministry of Education (MoE) had introduced the new education system known as “National Education System for the 21st Century or SPN21 (*Sistem Pendidikan Negara Abad ke-21*). SPN21 has brought tremendous change in the education system in Brunei Darussalam. The SPN21 brought three major changes in the education system namely, the education structure; the curriculum and assessment; and technical education. SPN21 had enabled students with high abilities to complete their secondary education four years’ time, instead of five years. SPN21 had also paved the roads to students in choosing suitable programmes according to their abilities, interests and growth development; hence complying to their needs. It also reflected on the Ministry’s quest in ensuring that students completed the minimum of five years of secondary schools before starting their post-secondary education or joining the workforce. This is stated in the National Education Policy (1993) as it prepared each student with 12 years of education. Nevertheless, it is compulsory to students from 6 and below 15 years old to attend nine years of formal education (Education Order 2007) (The Ministry of Education Strategic Plan 2012 –2017. 2012: 10-11).

Brunei SPN21 Education System Structure



Source: <http://www.seameo.org/index.php>

The Brunei Darussalam National Accreditation Council (BDNAC), as the sole accrediting agency in Brunei Darussalam, recognised the ODL mode of study and has outlined important accreditation criteria for ODL courses. The main objective of BDNAC’s recognition is to help working adults who have no opportunity to further their studies as full-time students due to the need for them to work and stay in the office. The form of education will provide a second chance and motivation to those who were not given the opportunity during their school days.

In Vision 2035, Brunei aimed to build a first class education system that provides opportunities for every citizen and residence. The education strategy will prepare the nation's youth for employment taking into consideration the requirements of the changing economy. Lastly, to ensure that higher education institutions prepare students who will meet the human resource needs of the country, Brunei targets for 40% participation rate in higher education.

Among the aims of Brunei Vision 2035 is to transform Brunei Darussalam as a nation widely recognised for the accomplishment of its educated and highly skilled people as measured by the highest international standards. To ensure the achievement of the goals, one of the strategies that have been identified by the Brunei government to ensure all aspects of development is implemented systematically and effectively is Education Strategy. The Brunei's Education Strategy aims to prepare the youth for employment and achievement in the world that is increasingly competitive and knowledge-based. Among the eight policy directions under this Education Strategy are (i) adopting international best practices in teaching and learning; (ii) devising programmes that promote lifelong learning and widening access to higher education; and (iii) promoting research, development and innovation both in government-funded institutions and through public-private and international partnership. This Education Strategy applies to both primary and higher education in Brunei. Brunei does not have any specific Higher Education Policy. Instead of existing policy, Brunei higher institutions or universities has the autonomy to decide or to implement anything about its higher education system.

ODL is not widely applied and practised in Brunei Darussalam due to its small population and stable economy. The total population of the country is 429,646 people, consists of the ethnics of Malays (65.7%), Chinese (10.3%), other aborigines 3.4% and other races 20.6%. In terms of population, the people of Brunei comprises of 23.8% (0-14 years), 17.1% (15-24 years), 46.9% (25-54 years), 7.8% (55-64 years) and 4.2% (65 years) (Central Intelligence Agency (CIA) The World Factbook: Brunei, 2015). Based on our interview, the total population of Bruneians continuing their studies in tertiary education is rather small. Hence the need to establish its own ODL institution is not the main concern, as what have been mentioned by Nelia Md Eusoff (2015) during the interview session:

“is not that we not open to this kind of learning, it's just that Brunei has the small population by even when you research, when they research the ratio of people one thing to do it, is not there for you, say for example they got the take out 250 thousands, ...the people who want to do it only ten, is it worth for you to open it?”

Meanwhile, the stability of the economy, Brunei depends on revenue from natural resource extraction and at the same time it encompasses a mixture of foreign and domestic entrepreneurship, government regulation, welfare measures, and village tradition. Crude oil and natural gas production account for 60% of GDP and more than 90% of exports. Per capita GDP is among the highest in Asia, and substantial income from overseas investment supplements income from domestic production. (Brunei Economy Profile 2014). Brunei has been able to provide favourable and accommodating educational infrastructure and set out policies that allow opportunities for Bruneians to access education in a conventional way. Consequently, ODL has not established any significant inroads as an alternative mode of accessing education in Brunei Darussalam.

In spite of the absence of any substantive plan to implement this system of education delivery, Brunei Darussalam, Brunei Darussalam, in any case, recognizes the advantages of ODL, especially, in connection to: broadening access in education; its adaptability and flexibility in satisfying steady re-preparing, 're-skilling' and up-reviewing necessities in a constantly changing society and business sector economy; and, including its apparent expense viability and lesser expense highlights.

At the same time, the status of ODL or e-learning in Brunei Darussalam has been clarified. A new policy for Open and Distance Education for Brunei Darussalam has been endorsed by the Brunei Darussalam National Accreditation Council (BDNAC). The Ministry of Education Brunei Darussalam through the BDNAC has recognised the Open and Distance Learning mode of study. The main aim of this policy is to help working communities/adults who have no opportunities to further their studies as a full-time student due to various circumstances. Therefore, BDNAC has set the accreditation criteria BDNAC for ODL courses as follows:

- (a) The university or institution must be accredited by the BDNAC.
- (b) Only courses of Masters and PhD levels are accredited (current practice).
- (c) The Masters and Ph.D. programmes/courses must not include programmes or courses in professional fields such as Engineering, Architecture, Accountancy, Law, Medicine, Quantity Surveying, Dental, etc.
- (d) The mode of delivery must be blended mode learning that involve face-to-face interaction and online learning.
- (e) The ODL programmes or courses should be comparable to the programme or course conducted formally or conventionally particularly in terms of entry requirements, duration, course content and mode of assessment.

For Brunei, Brunei Darussalam's National Accreditation Council (BDNAC) set up under the Ministry of Education. The aims of BDNAC are:

- (a) To assess and ascertain the value and status of any qualifications.
- (b) To ensure the evaluation processes and assessment criteria are consistent in accordance with national priorities.
- (c) To establish appropriate accreditation guidelines and to publish directories of qualifications and institutions accredited by the Government of His Majesty The Sultan and Yang Di-Pertuan Negara Brunei Darussalam.

(Ministry of Education Brunei Darussalam, 2008)

In the interview conducted, Executive Secretary of BDNAC, Awang Haji Adinin bin Md Salleh said that there is a tendency of people to confuse the Brunei Darussalam National Accreditation Council (BDNAC) and BDQF. He further explains, “...*Brunei Darussalam Qualification Framework*, then our council name is *BDANC*, so *BDQF* is under *BDANC*. *BDANC* is the council; *BDQF* is a framework, just like *MQA*”.

Hence, the framework also facilitates a coherent, consistent and robust way to be taken to the design of qualifications for higher education, general education and technical, vocational and professional education and training. Besides, the framework sets out criteria for both the accreditation of qualifications and for those organisations in the public and private sectors that deliver the programmes in Brunei Darussalam. Furthermore, it also provides guidance and a reference tool for accreditation to the awarding bodies and qualifications designers as well as programmes developers.

Nevertheless, the BDQF acts as a facilitative tool that aims to promote the concept of lifelong learning as the means to enable individuals to plan and access learning in order to fulfill their potential and to contribute to the future growth and prosperity of the Brunei Darussalam.

In Brunei, the provision of adult and continuing education had come into existence since 1958 when the Language & Literacy Bureau initiated classes with the objective to eradicate illiteracy amongst adult. Overall, there are 41 learning centres nationwide which are located mainly at the selected government primary and secondary schools as well as at the Continuing Education building, with 38 part-time appointed supervisors and 172 teachers to administer and handle the continuing education classes. For example, the Continuing Education Centre (CEC) of University of Brunei Darussalam (UBD) was formally formed on 1st January 2011. Entering its fourth year, the centre is highly committed to reaching the University's 2015 vision of becoming a top 50 university in Asia. The core mission of CEC is to promote learning as a lifelong process. As such, in addition to offering academic programmes that serve as gateways to UBD's undergraduate degree programmes, the Centre also offers courses available to the public such as the Foreign Language Courses. Besides, the CEC is also actively developing internationalisation through its Global Discovery Programme (GDP), through which the University welcomes international students as far afield as the United States, Japan and Korea.

Nonetheless, the CEC is dedicated to offer a variety of courses, certificates, workshops, and diploma programmes that is innovative and responsive to meet a broad range of learners. The instructors consist of people with years of experience and expertise to help strengthen the economic, cultural, technology, art, and the social fabric of the community. Moreover, the CEC has also collaborated with Hawaii's East-West Center in the 5-year Brunei-U.S. English Language Enrichment Project for ASEAN, which sees diplomats and officers from the 10 ASEAN nations exchanging ideas and learning about each other's culture through its 11-week English Language Programme. At present, the CEC is offering:

- (i) Global Discovery Programme
- (ii) Discover Brunei Course
- (iii) Intensive English Course
- (iv) Discover Malay Culture
- (v) Public Course
- (vi) Foreign Language Course for Public
- (vii) Programmes
- (viii) UniBridge Programme
- (ix) Bridging English Course (BEC)
- (x) Diplomas
- (xi) Diploma in Education
- (xii) Diploma in Technical Education
- (xiii) Diploma in Counselling
- (xiv) Diploma in Early Childhood Education
- (xv) Diploma in Inclusive Education
- (xvi) Online Learning (On-Going)
- (xvii) Brunei-US Project

(Source: <http://www.ubd.edu.bn/study-ubd/continuing-education/>)

In fact, according to the interview that we have conducted in the Ministry of Education with Adinin Bin Md Salleh on 15 February 2015 ago that, Brunei's government in actual fact is looking up Open University of Malaysia (OUM) as a model to develop the ODL programmes in Brunei. According to him that BDNAC already recognize ODL for Masters and PhD programme, should they want to go online but there are certain criteria to be fulfill, for example online or ODL it has to be blended. However, he reiterated that one of the obstacles that they found was many professional bodies not endorsed the ODL programme. Moreover, he cited that thus far that BDNAC realise there are many professional programmes yet to be endorsed by them.

Moreover, the Ministry of Education is actually planning the strategic plan with the framework for the ODL programmes. Nevertheless, Brunei is actually looking beyond the approval of the Master and PhD (Anis Faudzulani, 2015). It is because according to Anis Faudzulani (2015) from the interview we have conducted in the Ministry of Education on 16 February 2015 that she emphasised that ODL is something unavoidable in this globalization era. Hence, she asserted that:

"...because we know about the connected world and the in fact that for like I said the working adults, even for us the working need, we are seen a lot of mean now joining the work force as much earlier at the same time they're doing the part-time and if we had to seeing my private colleague, private university here will do see a lot of youth do it working at day time and study on the evening, this is something that we know for certain will happen much early than you know it happen yesterday already".

In indeed, the Minister, Yang Berhormat Pehin Orang Kaya Seri Kerna Dato Seri Setia (Dr) Haji Abu Bakar has been reiterated the significance of ODL as it would serve as an alternative pathway for those who are working or in service with government or private agencies to further their studies in the higher education institution. He said this mode of study would give "second chance education" and motivation to those who did not have the opportunity to further their studies. (Nurhamizan Hj Roslan, 2012). Moreover, in the 'titah', the monarch expressed confidence that UBD would be able to provide ODL programmes at the Master's and PHD levels. (Nurhamiza Hj Roslan, 2012). In view of Yang Berhormat Pehin Orang Kaya Seri Kerna Dato Seri Setia (Dr) Haji Abu Bakar's contribution to the development and emphasising the importance of ODL, Open University Malaysia (OUM), Malaysia's first open distance learning university, has conferred him with an Honorary Doctorate in Education by the President and Vice-Chancellor of Open University Malaysia, Professor Emeritus Tan Sri Anuwar Ali. With this conferment, definitely it will enhance the development of ODL in Brunei.

Conclusion

Although the ODL mode of learning is still new, but surely the huge potential are beneficial towards the development of a knowledgeable society and quality citizen parallel with Brunei's Vision 2035. ODL appears to be the backbone of Brunei's Education Strategy that aims to prepare the youth for employment and achievement in the world that is increasingly competitive and knowledge-based. Based on this research, Brunei Darussalam has changed its educational policy and quality framework as an effort to adapt with ODL and moving towards to accept the mode. Somehow, for the time being, they are still couldn't find the need to launch this mode of learning because the traditional mode applied still relevant and suitable for its citizen.

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List of Interviewees with the Designation

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Office of Assistant Vice Chancellor (Global Affairs)
University of Brunei Darussalam.

Adinin bin Md Salleh
Executive Secretary
Brunei Darussalam National Accreditation Council.

Anis Faudzulani Dzulkiflee
Senior Special Duties Officer / Head, Higher Education
Ministry of Higher Education.

Mohd Ishak bin Haji Ahmad
Acting Assistant Director
Jabatan Perancangan Kecemerlangan Pendidikan.

Nelia binti Md Eusoff
Education Officer (Higher Education Division)
Ministry of Education.

TRANSFORMING FUTURE PUBLIC HEALTH PROFESSIONALS THROUGH OPEN AND DISTANCE LEARNING (ODEL): CASE STUDY OF UPOU'S INTERNATIONAL HEALTH PROGRAM IN THE PHILIPPINES

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Abstract

Open and distance learning (ODL) practices have substantial contributions to make in achieving development goals such as those enshrined in the MDGs. The challenge however remains that of enhancing skilling, training and educating professionals who will contribute to this progress. In 2006, the World Health Organization (WHO) pointed out that an estimate 57 countries globally had a critical shortage equivalent to a global deficit of 2.4 million health practitioners. This figure suggests that a substantial number of people worldwide do not receive essential health care and services. Simply training and graduating more health professionals is not the answer to this vexing issue but where concerted and immediate efforts to transform and scale up health professionals' education are required to attain the right mix of skills and competencies of health professionals who can respond to the ever changing and evolving needs of populations around the world. Transformative scaling up of health professionals' education and training, which refers to the sustainable expansion and reform of health professionals' education and training to increase the quantity, quality and relevance of health professionals, strengthens a country's health systems and improve population health outcomes. In 2014, the University of the Philippines Open University (UPOU) was legally mandated to provide leadership in ODeL in the country which in part includes the design and implementation of programs to develop high level expertise through quality higher education degree programs and technical-vocational programs, and additionally help capacitate ODeL teachers and practitioners through capacity building and professionalization programs. By using ODeL approaches, the number of teachers, health practitioners and experts can be increased significantly above the numbers who could be trained using conventional educational methods. This paper seeks to provide a critical review of UPOU's Master in International Health program with respect to transforming and scaling up health professionals' education and training aimed at developing more responsive health practitioners in the face of 21st century global health challenges. The outcome of this paper will be relevant to institutions in Asia that offer ODeL based public health programs in efforts to achieve the goal of producing graduates responsive to the health needs of the populations they serve and thereby help move the future through open knowledge.

Introduction

The world is said to be short of 7.2 million health-care workers. This figure is expected to rise to 12.9 million by 2035 (WHO, 2014). While more countries have increased their health workforce by progressing towards the World Health Organization's (WHO) prescribed basic threshold of 23 skilled health professionals per 10,000 people, there are still 83 countries lagging behind (WHO, 2014). Sub Saharan Africa as a region acutely falls short whilst largest shortages in numerical terms are also expected in parts of Asia (WHO, 2014). The deficit is smallest in the European Region, at 0.07 million (1%) (WHO, 2014: 36). For countries presently below the threshold, there are 8.9 million skilled health professionals for a population of 4.7 billion, which corresponds to a deficit of about 7.2 million (WHO, 2014). Nearly half the deficit, totalling 3.4 million (47%), is in the South-East Asia Region alone where 27% of the world's population lives. Several key causes have been attributed to gaps in health care workers notably; an ageing health workforce with staff retiring or leaving for better paid jobs without being replaced, while inversely, not enough young people are entering the profession or being adequately trained. Increasing demands are also being put on the sector from a growing world population and with increasing risks of non-communicable diseases. Internal and

international migration of health workers is also exacerbating regional imbalances (WHO, 2014). Aluttis, Bishaw & Frank (2014) describe this “crisis in human resources” in the health sector as “one of the most pressing global health issues of our time”. Indeed the shortage of health workers has the greatest impact in low-income countries where insufficient public investment results in too few people being trained (Coughlan and Perryman, 2015). In addition, vacancies in high-income countries are attracting health-care workers from low- and middle-income countries, further exacerbating the problem (Coughlan & Perryman, 2015). Frenk, *et al.* (2010) note that these problems are systemic attributed to the following reasons: mismatch of competencies to patient and population needs; poor teamwork; persistent gender stratification of professional status; narrow technical focus without broader contextual understanding; episodic encounters rather than continuous care; predominant hospital orientation at the expense of primary care; quantitative and qualitative imbalances in the professional labour market; and weak leadership to improve health-system performance. Without substantial interventions, such trends will have serious implications for the health of billions of people across all regions of the world in that “a global under-supply threatens the quality and sustainability of health systems worldwide” (Aluttis *et al.*, 2014: 1). Professional education on its part has not kept pace with these challenges, largely because of fragmented, out-dated, and static curricula that produce ill-equipped graduates. The WHO (2014) indeed warns that the current rate of training of new health professionals is falling well below projected demand. The increasing prevalence of infectious and chronic diseases, as well as the deteriorating public health infrastructure in many settings in the world in part requires for renewed interest in the professional preparation and training of the public health workforce (Allegrante *et al.*, 2009) as health has become the center of many important global issues, including economic development, global security, effective governance, and human rights promotion (Frenk, *et al.* 2010). It is therefore recommended that a redesign of professional health education is necessary and one that is timely in view of the opportunities for mutual learning and joint solutions offered by global interdependence due to acceleration of flows of knowledge, technologies, and financing across borders, and the migration of both professionals and patients (Frenk, *et al.* 2010: 5).

As more health professionals are needed with new competencies and motivation to serve the needs of society, it is envisioned that efforts in doing so should be geared at the transformation of health professionals’ education in order to attain the right mix of skills and competencies of health professionals who can respond to the ever changing and evolving needs of populations around the world. The WHO defines transformative scaling up of health professionals’ education and training as “the sustainable expansion and reform of health professionals’ education and training to increase the quantity, quality and relevance of health professionals, and in so doing strengthen the country health systems and improve population health outcomes” (WHO, 2014: 11). This paper therefore seeks to provide a critical input to the planned MIH program with respect to transforming and scaling up health professionals’ education and training aimed at developing more responsive health practitioners in the face of 21st century global health challenges. The outcome of this paper will be relevant in informing the review process of the program at University of the Philippines Open University (UPOU) as well as to institutions in Asia that offer/plan to offer ODeL based public health programs in efforts to achieve the goal of producing graduates responsive to the health needs of the populations they serve and thereby help move the future through open knowledge.

Background

UPOU was established on 23rd February 1995 as the 5th constituent university of the University of the Philippines System. Its offices and mandate is to provide education opportunities to individuals aspiring for higher education and improved qualifications for those who are unable to take advantage of traditional modes of education. UPOU is envisioned to be a leader in open and distance *e-learning* (ODeL) in the Philippines and in the region (Villamejor-Mendoza, 2013) in line with Republic Act No. 10650 of December 9, 2014. The Act mandates UPOU to offer expertise in the design and implementation of programs to develop high level expertise through quality higher education degree programs and technical-vocational programs, and additionally help capacitate ODeL teachers and practitioners through capacity building and professionalization programs (RoP, 2014). UPOU’s

mission is therefore in line with this legal mandate in providing learners access to quality higher education through innovative methods of teaching and learning that are responsive to their needs as well as to development priorities of the country and the global community (Villamejor-Mendoza, 2013: 135). UPOU is the only Open University in the Philippines offering academic programs and grants degrees through open and distance education (ODE), and recently, through ODeL (Villamejor-Mendoza, 2013: 136). Open learning refers to a philosophy of learning that is quality-assured, open to people, methods, places and ideas and is highly flexible and learner-centered, enabling the latter to learn at a time, place and pace which satisfy the person's circumstances and requirements (Angara *et al.*, 2010). With respect to the international health program on offer at UPOU, this is designed with the aim of developing health professionals mainly from middle and low-resource countries (UPOU/FMDS, 2015). The Program is offered by the Faculty of Management and Development Studies (FMDS), one of the three faculties of studies of UPOU. Table 1 highlights the curriculum on MIH which is comprised of 36 units of courses, including six units of thesis. A review is currently being undertaken at the time of writing this paper in preparation to roll out the MIH degree which follows a ladderized program from the diploma in International health (DIH).

Table 1: Curriculum in International Health

Core courses (12 units)		
Course Code	Title	Description
IH 201	International Health and Development (3 units)	Introduction to health, social, cultural, and economic development issues
IH 202	Global Disease Epidemiology and Control (3 units)	Overview of emergence, epidemiology and control of common diseases that have global impact
IH 203	International Health Laws and Regulations (3 units)	Overview of international health laws and regulations
IH 204	Health Research Methods (3 units)	Principles of and methods in the design, ethical implementation, and utilization of health research (Prerequisite IH 202)
Major courses (12 units)		
IH 211	Health Promotion Theory (3 units)	Introduction to theories, models, and principles of health promotion
IH 212	Health Promotion Practice (3 units)	Health promotion practice with regard to priority public health conditions and global health priorities
IH 213	Health Promotion for Equity and Sustainable Development (3 units)	Application of health promotion concepts and principles in addressing problems of global health, equity, and sustainable development
IH 214	Health Promotion Leadership and Management (3 units)	Principles and styles of leadership, and management skills in health promotion
IH 222	Healthcare Policy and Governance (3 units)	Analysis of governance and policy frameworks for improving population health
IH 223	Human Resource Management in Health (3 units)	Analysis of key issues in health human resource management
IH 224	Health Financing (3 units)	Development of health financing systems and institutions in resource-poor settings

Cognate courses (3 units)		
The students are required one cognate course.		
IH 231	Health Information Systems (3 units)	Management and organization of health-related information for improved healthcare delivery
Elective courses (3 units)		
IH 241	Public Mental Health (3 units)	
IH 242	Population Aging (3 units)	Introduction to the multidisciplinary approach to aging
IH 243	Health Emergency Management (3 units)	Health emergency management with emphasis on an all-hazards approach, a risk management framework, and strategies for the prevention, preparedness, response and recovery in emergencies and disasters
IH 300	Thesis (6 units)	The thesis has an internship component that provides an opportunity for students to apply the knowledge and skills developed through coursework to an organizational or agency setting. Students are expected to develop a research related to their organizational setting.

Source: FMDS, 2015

Discussion

Under the open learning system at UPOU, courses in the DIH/MIH Program are delivered through e-learning. The virtual classrooms are run in MyPortal, the learning management system of the UPOU (FMDS, 2015). The virtual classrooms provide venues for co-creation of knowledge. Its learners, both faculty and students, are expected to contribute in knowledge building and management through the discussion forums, chat rooms, wikis and other collaborative mechanisms in its LMS, e.g., glossary-building, games, conferencing, etc. (Villamejor-Mendoza, 2013: 144). These are also venues for the use and sharing of OER materials as complementary reference materials to enhance and update online teaching and learning. Indeed new and advancing technologies provide huge opportunities for healthcare workforce of developing countries to engage in exciting and innovative e-learning experiences for their benefits. Open Educational Resources (OER) and open educational practices (OEP) are increasingly being fronted and used around the globe to train and support professionals in situations where funding and resources are scarce (Coughlan & Perryman, 2015). Angell, Hartwell & Hemingway (2011: 549) posit that “there would appear to be an inherent link between OER and public health in terms of their philanthropic aims and contribution toward reducing learning and health inequalities”. The authors therefore note that public health OER may be seen as an affordable and credible means to “reduce the growing disparity in health between developing and developed countries” and, as such, “may offer a means of extending public health education in deprived areas and developing countries, where access to public health education is limited by lack of teaching facilities and resources” (Angell *et al.*, 2011: 552). In the age of globalization and international migration, distance learning, especially web and internet based, offers the opportunity for students to sale up their knowledge and skills. E-learning is now regarded as an effective tool in healthcare workforce training and development (Safie & Aljunid, 2013: 590). It has in some way positive effect on the learning process of learner by providing supplementary and updated knowledge that may not otherwise be acquired in a traditional classroom-based instruction. Through e-learning, healthcare workforce can easily access, monitor and record their learning progress (Safie & Aljunid, 2013). If properly executed, the method can be an effective tool to support learning as a collaborative, collective and social experience (Safie & Aljunid, 2013). Knebel (2001), in a review of over 100 articles about distance learning in health care, found that the major benefit of distance learning was the convenience and accessibility of training for those who do not live near traditional training centres

and universities. Knebel (2001) also cited distance learning as a way to stem the brain drain to foreign educational institutions. Improving accessibility to healthcare learning and knowledge transfer is therefore deemed an important way to address expertise issues in the healthcare sector of developing countries especially given evidences on the effective use of e-learning in healthcare education in such contexts (Chhibber, 2004; Wautier *et al.*, 2005).

The IH program of UPOU therefore takes into cognizance what the literature acknowledges as the alternative solution ODeL offers to health care worker training challenges (Nartker, *et al.* 2010). ODeL has therefore become a viable method for increasing the skills of health care workers in low-resource settings. It offers several advantages: students can continue to work at their health facilities while they are upgrading, thus continuing to support themselves and their families, and also ensuring that their health facilities do not experience staffing challenges as a result of the health care workers' participation in training (Nartker, *et al.* 2010: 8). Given the IH curricula described in Table 1, it must be emphasised that curricula in any discipline needs to be adapted to produce professionals with the capacity to identify and adjust to new environments in a continuous process of learning and adapting their competencies as well. As such, online education has been found to be an effective in increasing participants' knowledge. For instance, a 2010 meta-study of 50 online education studies (including 43 that focused on adult learners) conducted by the US Department of Education found that 'learning outcomes for students who engaged in online learning exceeded those of students receiving face-to-face instruction' (2010, p. 14). The ODeL program in IH therefore holds great potential to increase the motivation, knowledge, and skills of health care workforce, and where properly planned pre-service programmes, utilizing ODeL may in some way contribute to reducing the country's shortage of health care workers (Nartker, *et al.*, 2010: 9). It should be one that promotes interactions, collaboration and communication which UPOU's virtual classroom seeks as venues for co-creation of knowledge (Villamejor-Mendoza, 2013: 144).

Transformative Learning and Interprofessional Education (IPE)

The shortage of health workers in many developing country contexts are compounded by the fact that their skills, competencies, clinical experience, and expectations are often poorly suited to the health needs of the populations they serve (WHO, 2014). The tendency of training health human resources has been excessively focused on institutional-based education that in large is segregated into professional silos that do not adequately prepare health professionals for team work, and for leadership skills required in 21st century health services (Frenk, *et al.*, 2010). Proposed strategies to stem widening gaps in healthcare workers therefore require a rethink and improvement in teaching, training, deployment and payment of health workers to widen their impacts. The WHO (2013) guidelines on transformation and scaling up of health professionals' education and training call for new approaches in health professionals' education that transform systems and encourage the move away from the traditional focus on tertiary care hospitals to initiatives that foster community engagement (WHO, 2013). Transformative learning is a deep shift in perspective during which habits of mind become more open, more permeable, and better justified (Cranton, 2006; Mezirow, 2000). According to Mezirow (2000), the process centers on critical reflection and critical self-reflection. According to Cranton (2006: 2), transformative learning generally occurs when a person, group, or larger social unit encounters a perspective that is at odds with the prevailing perspective. Transformation is said to occur when discrepant perspectives lead to an examination of previously held beliefs, values, and assumptions. When the latter is the case, the potential for transformative learning exists, though it is not called transformative until there is a deep shift in perspective and noticeable changes in actions as a result of the shift (Cranton, 2010: 2). WHO seeks therefore to encourage educational and training institutions that foster and enhance the interaction and planning between education, health and other sectors. In doing so, the process of learning is one that should be geared towards what the WHO (2013) regards as Interprofessional Education (IPE) where students from various professions learn together as a team. Their collaborative interaction is in such a learning process is one that is characterized by the integration and modification of different professions' contributions in light of input from other professions. The WHO (2006) notes that the hallmark of

IPE is the type of cognitive and behavioural change that occurs when participants understand and are familiar with the basic language and mind-sets of various disciplines. The WHO (2006: 45) outlines in this regard a number of principles believed to be important in the design of IPE curricula notably:

- (a) Has relevance to learners' current or future practices
- (b) Uses typical, priority health problems that require interprofessional approaches for their solution
- (c) Interprofessional learning based on work practice
- (d) Learning methods that facilitate interaction between learners from different professions including small group learning. Formats such as case-based and problem-based learning have been shown to be particularly effective

Ablah *et al.* (2014) note that global health competencies have indeed been developed for medicine and nursing students, yet, until recently, no standardized global health competency model existed for master-level students in public health. Various groups and individuals have recommended the need for such competencies and improved global health training and education, in general (Finberg & Hunter, 2013; Frenk, 2010; Finch *et al.*, 2011; Hagopian *et al.*, 2008). In response to this, a Global Health Competency Model 1.1 was conceptualised and spearheaded by the Association of Schools of Public Health (ASPH, now the Association of Schools and Programs of Public Health, or ASPPH) (Figure 1).

<p>DOMAIN 1: Capacity Strengthening</p> <p>Capacity strengthening is the broad sharing of knowledge, skills, and resources for enhancement of global public health programs, infrastructure, and workforce to address current and future global public health needs.</p> <ol style="list-style-type: none"> 1.1 Design sustainable workforce development strategies for resource-limited settings. 1.2 Identify methods for assuring health program sustainability. 1.3 Assist host entity in assessing existing capacity. 1.4 Develop strategies that strengthen community capabilities for overcoming barriers to health and well-being. 	<p>DOMAIN 5: Program Management</p> <p>Program management is the ability to design, implement, and evaluate global health programs to maximize contributions to effective policy, enhanced practice, and improved and sustainable health outcomes.</p> <ol style="list-style-type: none"> 5.1 Conduct formative research. 5.2 Apply scientific evidence throughout program planning, implementation, and evaluation. 5.3 Design program work plans based on logic models. 5.4 Develop proposals to secure donor and stakeholder support. 5.5 Plan evidence-based interventions to meet internationally established health targets. 5.6 Develop monitoring and evaluation frameworks to assess programs. 5.7 Utilize project management techniques throughout program planning, implementation, and evaluation. 5.8 Develop context-specific implementation strategies for scaling up best-practice interventions.
<p>DOMAIN 2: Collaborating and Partnering</p> <p>Collaborating and partnering is the ability to select, recruit, and work with a diverse range of global health stakeholders to advance research, policy, and practice goals, and to foster open dialogue and effective communication.</p> <ol style="list-style-type: none"> 2.1 Develop procedures for managing health partnerships. 2.2 Promote inclusion of representatives of diverse constituencies in partnerships. 2.3 Value commitment to building trust in partnerships. 2.4 Use diplomacy and conflict resolution strategies with partners. 	<p>DOMAIN 6: Socio-cultural and Political Awareness</p> <p>Socio-cultural and political awareness is the conceptual basis with which to work effectively within diverse cultural settings and across local, regional, national, and international political landscapes.</p> <ol style="list-style-type: none"> 6.1 Describe the roles and relationships of the entities influencing global health. 6.2 Analyze the impact of transnational movements on population health. 6.3 Analyze context-specific policy making processes that impact health. 6.4 Design health advocacy strategies. 6.5 Describe multi-agency policy-making in response to complex health emergencies. 6.6 Describe the interrelationship of foreign policy and health diplomacy.
<p>DOMAIN 3: Ethical Reasoning and Professional Practice</p> <p>Ethical reasoning and professional practice is the ability to identify and respond with integrity to ethical issues in diverse economic, political, and cultural contexts, and promote accountability for the impact of policy decisions upon public health practice at local, national, and international levels.</p> <ol style="list-style-type: none"> 3.1 Apply the fundamental principles of international standards for the protection of human subjects in diverse cultural settings. 3.2 Analyze ethical and professional issues that arise in responding to public health emergencies. 3.3 Explain the mechanisms used to hold international organizations accountable for public health practice standards. 3.4 Promote integrity in professional practice. 	<p>DOMAIN 7: Strategic Analysis</p> <p>Strategic analysis is the ability to use systems thinking to analyze a diverse range of complex and interrelated factors shaping health trends to formulate programs at the local, national, and international levels.</p> <ol style="list-style-type: none"> 7.1 Conduct a situation analysis across a range of cultural, economic, and health contexts. 7.2 Identify the relationships among patterns of morbidity, mortality, and disability with demographic and other factors in shaping the circumstances of the population of a specified community, country, or region. 7.3 Implement a community health needs assessment. 7.4 Conduct comparative analyses of health systems. 7.5 Explain economic analyses drawn from socio-economic and health data. 7.6 Design context-specific health interventions based upon situation analysis.
<p>DOMAIN 4: Health Equity and Social Justice</p> <p>Health equity and social justice is the framework for the analysis of strategies to address health disparities across socially, demographically, or geographically defined populations.</p> <ol style="list-style-type: none"> 4.1 Apply social justice and human rights principles in public health policies and programs. 4.2 Implement strategies to engage marginalized and vulnerable populations in making decisions that affect their health and well-being. 4.3 Critique policies with respect to impact on health equity and social justice. 4.4 Analyze distribution of resources to meet the health needs of marginalized and vulnerable groups. 	

Figure 1: Global Health Competency Model 1.1
Source: Ablah *et al.* (2014: 564)

UPOU's MIH program is in line with IPE principles in that it is designed and brings together medical and other professionals working in the field of health and development like nursing, dentistry, veterinary medicine, allied medical professions, social work and related fields (FMDS, 2015). Curricula are not only the means by which health professionals acquire knowledge, but should be one that can act as a vehicle for participation in IPE and evidence-based practice. It is therefore more critical today to adapt a curricula that health professionals must be able to identify with and adapt to cultural variations and values, as well as attitudes to the different health problems of populations (Frenk *et al.* 2010). The UPOU MIH curricula factor these considerations in its design in is spirit of 'openness' characterized by a 'free and mutual exchange of knowledge unhampered by traditions, paradigms, structures, distance, hierarchy, class, age, gender and economic barriers' (Villamejor-

Mendoza, 2013: 139). A challenge for faculty therefore is that competencies are action-based, thus requiring less passive approaches to student-learning.

An Adaptive Curricula

It is timely that the FMDS is in the process of reviewing the MIH curricula. As such, the new curriculum may adapt the Global Health Competency Model 1.1. The Model may be used by graduate-level educators, in part or in full, to better prepare students in schools and programs of public health and global health education programs for the workforce. The competency model is also applicable to those implementing a broader public health curriculum that integrates global health throughout the curriculum.

The UPOU MIH curricula review should equally consider Ablah *et al.*'s (2014) emphasis for clearly defined competencies, particular in master's-level global health education, that will aim to ensure that students are able to demonstrate the KSAs needed for successful performance in today's global health workforce. Using the model will assist faculty in preparing students from a variety of global health programs across institutions such as international relations/affairs, health profession schools, law schools, business schools, and social and biologic sciences. As such, students able to demonstrate the full array of knowledge, skills, and attitudes as depicted in the model will be better prepared for a wide variety of global workforce positions. Within such curricula, e-learning can become an innovative teaching and learning strategy considered for IPE particularly if it is delivered in an open access environment (Frehywot *et al.* 2013).

Another advantage to be considered for e-learning is that it is accessible by health professionals working in remote areas whereby they can continue developing their competencies through such means as a versatile distance education medium (Frehywot *et al.* 2013). Mairs, *et al.* (2013: 269) note that online knowledge transfer in health/public-health-related professional contexts is "most often targeted at the sharing of literature or other practice-based information to and between researchers and/or clinicians", a strategy that is "especially advantageous as it facilitates collaboration of individuals who are often geographically dispersed". Angell *et al.* (2011) therefore suggest that quality and updating of resources [are of] particular significance due in large to risks involved in health professionals learning from incorrect or out-of-date resources. According to Villamejor-Mendoza (2013), UPOU uses Resource-based approach to course development is also a step towards OER sharing and distribution. The Institution and its programs are slowly inculcating among its stakeholders the culture of mining and populating the Web for academic purposes. It has also encouraged research sharing online, in order that the proportion of scholarly materials in the Web may increase (Villamejor-Mendoza, 2013: 144). The direction therefore in online education reform is towards a thorough and authoritative re-examination of health professional education that aims towards improvement in the performance of health systems. This process seeks to adapt core professional competencies to specific contexts, while drawing on global knowledge (Frenk, *et al.*, 2010). As a recommendation, this process will require mapping student competency to existing coursework which, in many cases, exposes deficiencies in the curricula. When discovered, the missing content needs to be reconciled with the overall aims of the educational program so that, indeed, the school is delivering what it promises to both students and future employers (Ablah *et al.*, 2014). As such, it may aide in stimulating conversations at both school and program levels regarding a consistency in building and achieving educational goals.

Professional Credentials

Efforts to establish credentialing processes and systems for health promotion and health education are relatively recent compared to those of other health professions such as nursing and medicine, which date back to the 1700s (Allegrante *et al.* 2009). Efforts are underway to enhance transnational quality assurance in the training and credentialing of health promotion and health education professionals. Allegrante *et al.* (2009: 428) cite Australia, Europe, and North America in mooted a transcontinental effort to promote such quality assurance amid distinct differences in professional preparation and credentialing of such professionals in their respective domains. Other attempts to develop systems of credentialing in an effort to join the broader European, North American, and Southwest Pacific region in professionalizing health promotion and health education include Spain (Irigoin & Vargas, 2002), Japan (Sakagami, 2004) and Israel (Melville, Howat, Shilton, & Weinstein, 2006). Beyond these, the People's Republic of China, India, and Taiwan have engaged in nascent efforts to improve health promotion practice (Allegrante *et al.*, 2009). The Asia Pacific Academic Consortium for Public Health (APACPH) is moving towards this direction. Currently, the APACPH, through its Accreditation Secretariat, is in the process of developing a pool of reviewers for the APACPH accreditation initiative and has made a call for volunteers to assist in this process (APACPH, 2015). Africa remains the only remaining major region of the world where the movement has yet to materialize (Allegrante *et al.*, 2009). What is common of these transcontinental quality assurance efforts are the following shared goals: (a) to protect the public by establishing and ensuring a minimum acceptable standard of quality and performance for professionals working in population health, (b) to improve or strengthen institutions and programs of professional preparation through systems of external peer review and increased public accountability, and (c) to promote continued professional development of the workforce in an effort to strengthen public health capacity.

Credentialing efforts by the MIH program must ensure that the competency of public health professionals is important (Baker *et al.*, 2005) especially in consonance with the principles of the Galway Consensus Conference which seeks to promote global exchange and understanding concerning core competencies and accreditation in the professional preparation of health promotion and health education specialists (Allegrante *et al.*, 2009). Transcontinental approaches to credentialing and quality assurance systems may thus hold the promises of ensuring international standards are better streamlined. The MIH program of UPOU needs to factor in such competencies which must be put in place to ensure that persons who deliver a given service have obtained a minimum level of competency, including accreditation of institutions as well as licensure, certification, or registration of individuals (Allegrante *et al.* 2009: 429).

Conclusion

With rapidly increasing globalization of threats to human health, international health issues are likely to have increasing impact on the work of health promotion and health education specialists requiring as a result health professionals to demonstrate the competency and skills to meet such challenges using the best practice-based evidence and newest technologies available (Allegrante *et al.*, 2009: 434). It is therefore of critical essence to retain current health care workers and increasing the skills and the numbers of qualified health care workers capable of meeting the health care needs of population they serve (Nartker *et al.*, 2010). As such schools and programs of public health such as UPOU's MIH have great potential to meet the demand for global health professionals. ODeL has become a viable method for increasing the skills of health care workers in low-resource settings. UPOU's IH program takes into cognizance what the literature acknowledges as the alternative solution ODeL offers to health care worker training challenges (Nartker, *et al.* 2010) Caution is however made against the rhetoric of e-learning for training health care workers. The recommendation is that e-learning is not merely about the content and delivery of teaching rather it is a pedagogical approach that aims to be flexible, engaging and learner-centered. As such, curricula should be that effectively scales up the education and training of health providers to the new epidemiological and demographic challenges while ensuring a proper skill mix (Frenk, *et al.*, 2010: 21). However, given the lack of an

established credential body in the Asia Pacific per se, the reviewed curriculum of MIH at UPOU should adapt the Global Health Competency Model 1.1 based on the principles of the Galway Consensus Conference which seeks to promote global exchange and understanding concerning core competencies and accreditation in the professional preparation of health promotion and health education specialists.

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OPENNESS IN EDUCATION: TEACHER PERSPECTIVES THROUGH CONCEPT MAPPING

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Abstract

Adoption of Open Educational Resources (OER) by educators can be truly effective only if it reflects a 'change' in their thinking and actions. A study is implemented at the Open University of Sri Lanka to investigate the impacts of integrating OER in educational practice of teachers, in terms of changes in the quality of teaching-learning materials teachers use and changes in their pedagogical perspectives and practices. Since changes in teachers' pedagogical practices would be influenced by their pedagogical perspectives, it is important to capture and see how it changes, and also to support teachers to reflect on their changing perspectives. In this study, concept mapping is used as a strategy for this purpose. Concept maps provide a graphical representation of an individual's structural knowledge or conceptual understanding of a particular topic (Novak & Cañas, 2008), and thus can be used as a tool to visualize and measure the depth, breadth, and organization of individuals' knowledge that will help them to reflect on their concepts and consequently revise any misconceptions. This paper presents a survey on the initial perceptions of 230 student teachers on "Openness in Education", as captured by a concept mapping exercise. Qualitative analysis of the knowledge structures in the concept maps indicated the occurrence of three morphological types: chains, spokes, and nets (Kinchin, 2008). While a majority was spoke structures which demonstrated limited understanding or a superficial understanding, there were some network structures signifying a deeper understanding of the concepts. The content analysis of the concept maps revealed that even though the concept of OER was novel to the teachers, their perspectives on 'sharing' and 'openness' and its relevance to teaching and learning were quite positive and optimistic. Despite various issues such as technical problems and skill limitations, it was encouraging noting that they were prepared to face such challenges and integrate these concepts in their teaching. Concept mapping strategy can be used to support teachers to reflect on their changing perspectives on 'openness in education', and improve them in a positive manner, so that it will eventually affect their professional practices.

Keywords: *Openness in Education, Concept mapping, Teacher Perspectives*

Introduction

Increased availability of Open Educational Resources (OER) significantly contributes to the teaching-learning processes not only by providing free and open access to teaching, learning and research materials that are released under an open licensing (UNESCO, 2012), but also by promoting a more open, participatory, collaborative, creative and sharing culture among individuals. Educators are placed in a very responsible and a challenging position in finding appropriate educational materials as well as for using them effectively to support teaching and learning (COL, 2011). Adoption of OER by educators can be truly effective only if it reflects a ‘change’ in their thinking and actions. It has been argued that if intended outcomes of an educational innovation are to be achieved, it is essential to have changes in actual practices along three dimensions: the possible use of new or revised materials; the possible use of new teaching approaches; and the possible alteration of beliefs (Fullan, 1993). This implies the value of focusing on people, and changes in their thinking and actions, rather than only on materials.

An action research project is currently being implemented by the Open University of Sri Lanka (OUSL) to investigate the impacts of integrating OER in educational practice of secondary school teachers, in terms of changes in the quality of teaching-learning materials teachers use as well as changes in their pedagogical perspectives and practices. The term ‘pedagogical perspective’ is being used in this study to articulate one’s whole approach to teaching including theoretical knowledge that underpins their choice of teaching methods and strategies as well as tools, and ‘pedagogical practices’ refers to the actions and activities one would take based upon their pedagogical perspectives.

Since changes in teachers’ pedagogical practices would be influenced by their pedagogical perspectives, it is important to observe how those changes occur. In this study, concept mapping is used as a key strategy to capture such changes in teachers’ thinking during the integration of OER in their teaching-learning processes. This paper presents findings of a survey conducted on the initial perceptions of a group of teachers on “Openness in Education”, as captured by a concept mapping exercise, and discusses its implications in supporting teachers to reflect on their changing perspectives.

Review of Literature

‘Openness in education’ is a widely discussed notion, most often related with the concept of OER. Openness of content has been discussed in terms of the rights a user of the content is granted, based on the ‘4Rs framework’ of OER that permits users to reuse, revise, re-mix, or redistribute content (Wiley, 2009). Accordingly, creators of OER, while retaining their copyright, could allow others to use their work to the level of ‘openness’ they may wish to accommodate. Hence ‘openness’ affects the practices of teaching and learning as well as the motivations of people who support such practices (Wiley & Green, 2012). Yet, shifting from conventional ‘closed’ pedagogical practices towards more ‘open’ practices poses various challenges to teachers and learners.

As recognized by the Cape Town Declaration (2008) OER can ‘forcefully play the role of nourishing the participatory culture of learning, creating, sharing and cooperation that is required by the rapidly changing knowledge societies’. However, a sharing culture and collaborative practices among individuals will depend on their pedagogical beliefs and perspectives. Supporting teachers to understand and reflect on their changing perspectives in relation to ‘openness in education’ will enable them to move towards more ‘open educational practices’ (Ehlers, 2011).

Concept mapping is a widely used and a well-researched strategy as a diagnostic tool to elicit knowledge structures and understandings of learners. Concept maps are described as graphical tools for organizing and representing knowledge (Novak & Cañas, 2008) and devices that outline relationships between different ideas (Davies, 2010). These are depicted by including key and related concepts in a hierarchical manner with connecting arrows as links and cross-links, as well as linking words or phrases to specify the relationships between the concepts, as shown by Fig. 1.

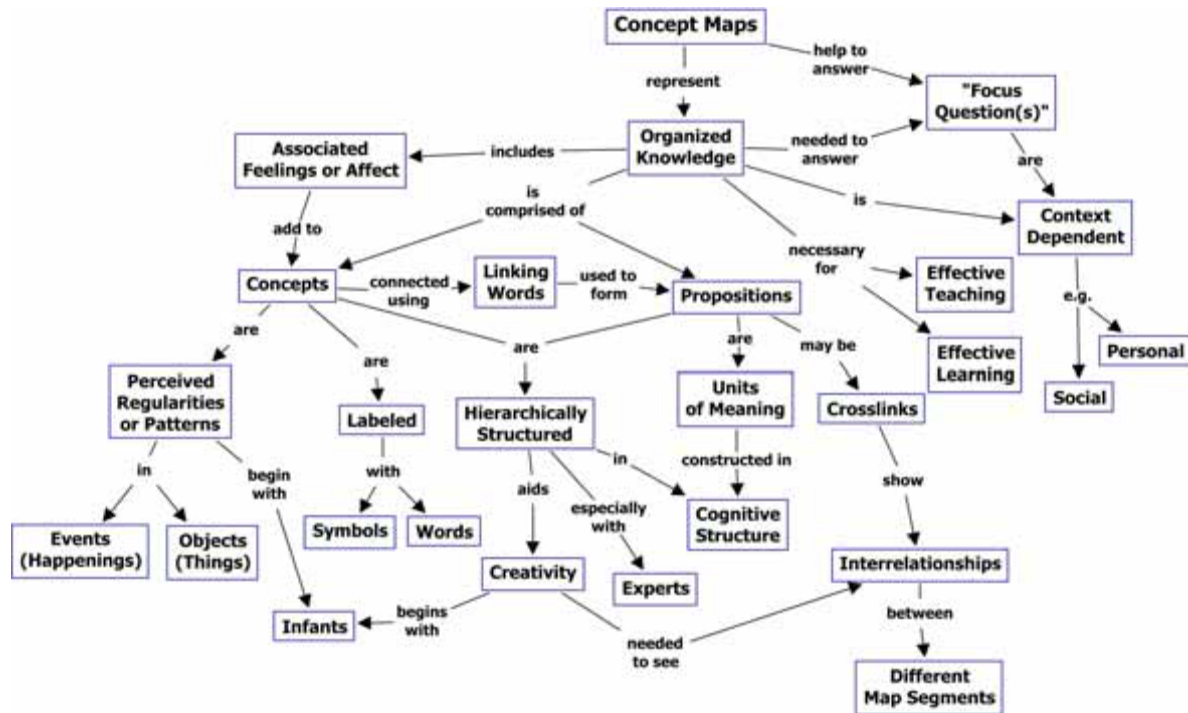


Fig. 1: A concept map on concept maps (From Novak & Cañas, 2008, p.2)

With an underlying theoretical base in relation to the assimilation of new concepts and propositions into learners' existing cognitive structures, Novak & Cañas (2008) argue that concept maps provide an effective way to comprehend conceptual changes, which is necessary for a meaningful learning to occur. In addition to assessing student knowledge and understanding of a subject, concept maps also provide an indication of deep or surface learning (Hay & Kinchin, 2006; Hay, 2007). Further, since a concept map provides a graphical representation of an individual's structural knowledge or conceptual understanding of a particular topic, it can be used to visualize and measure the depth, breadth, and organization of an individual's knowledge that will be helpful for a learner to reflect on his/her concepts and consequently revise any misconceptions (Novak & Cañas, 2008).

Various structural typologies have been identified to qualitatively describe the features of concept maps. Three major patterns of concept maps indicating different knowledge structures are identified as: (a) Spoke- a radial structure in which all the related aspects of the topic are linked directly to the core concept, but are not directly linked to each other; (b) Chain- a linear sequence of understanding in which each concept is only linked to those immediately above and below; (c) Net- a highly integrated and hierarchical network (Kinchin, Hay and Adams, 2000). While network structured concept maps indicate an in-depth understanding of a subject, characterizing deep learning, spoke and chain structured concept maps demonstrate a lack of understanding and superficial learning (Kinchin et al., 2000). As an implication of this classification Kinchin, (2008) discuss how visualization of knowledge structures through concept mapping enable re-conceptualization of expertise by separating the *chains of practice* that are manifest in teachers' actions from the underlying *networks of understanding*.

A number of studies conducted on the use of concept mapping in knowledge representation and analysis of concept maps have revealed the usefulness of this strategy in education (Kinchin, 2013; Kandiko & Hay, 2010; Hay, 2007). For instance, Hay (2007) suggests that concept mapping can be used to measure and typify the *quality* of learning, distinguishing deep, surface and non-learning, through the assessment of knowledge-structure change and measures of conceptual richness. Further, using concept maps in discipline-based university settings Kandiko and Hay (2010) analyzed the consequences of mapping high-level thinking and the widening use of images and language in the maps.

Concept mapping strategy has also been used a powerful tool for facilitating representation of individuals' understandings of OER and related concepts, during a professional development programme of Sri Lankan teacher educators in integrating OER in their teaching-learning process, revealing incremental developments in their understandings and significant changes in their mindsets over time (Karunanayaka & Naidu, 2014; Karunanayaka, Naidu, Dhanapala, Gonsalkorala & Ariyaratne, 2014). As such, concept mapping process can be very useful not only as a pedagogical tool, an assessment tool, and a meta-cognitive tool for learners, but also as a research tool for educators.

Methodology

Research Design

As a part of the action research project implemented by the OUSL to investigate the impacts of integrating OER in educational practice of school teachers, intervention workshops were conducted at the nine Regional Centres of OUSL (Colombo, Kandy, Matara, Anuradhapura, Batticaloa, Jaffna, Badulla, Kurunegala and Ratnapura) representing the nine provinces of the country, for student teachers of the Faculty of Education, OUSL. During this workshop, a pre-intervention survey was conducted to discover the teachers' existing perceptions and practices on OER-related concepts, through administering a questionnaire and via a concept mapping exercise.

Research Questions

This paper explores the initial perspectives of teachers on “Openness in education” as captured by their concept maps.

The following research questions guided this line of inquiry:

- How do the knowledge structures of concept maps reveal teacher perspectives on “openness in education”?
- What are the teacher perspectives on “openness in education” as illustrated by their concept maps?
- How can concept mapping be used to support teachers to reflect on their changing perspectives on “openness in education”?

Participants

The participants of the study constituted 230 student teachers from the nine OUSL centres. Their distribution centre-wise and gender-wise is presented in Fig. 2 and their background information is presented in Table 1.

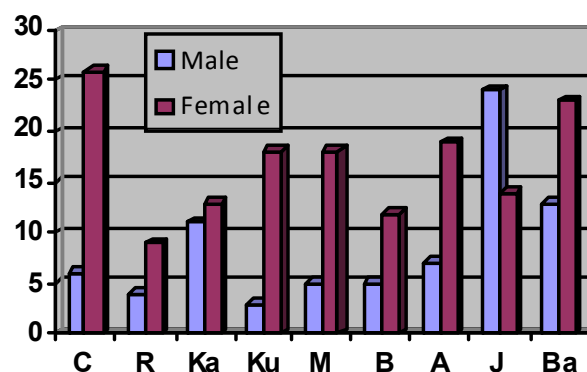


Fig. 2: Participant distribution – Centre-wise

Table 1: Background Information of the Participants

Gender	Academic Qualifications	Professional Experience	Heard of 'OER' Before
M-34%	1 st Degree – 100%	<5 – 50.4%	Yes – 10%
F - 66%	PostGrad – 16.1%	6 -15- 47.9%	No – 90%
		>15 – 1.7%	

All participants (N = 230) were graduate teachers who teach various subjects at secondary level. They comprised 66% females and 34% males, majority representing Jaffna (16.5%), Batticaloa (15.7%) and Colombo (14%) centres. While 50.4% had less than 5 years of teaching experience, 47.9% had between 6-15 years and 1.7% above 15 years. The participants' awareness on OER was found to be very minimal, with 90% not even having heard the term OER before.

Collection & Analysis of Data

During the pre-intervention survey conducted at the workshops, participants were requested to individually draw concept maps, indicating their current understanding and thinking in relation to "Openness in Education". Since OER was a new concept to a high majority (90%), this particular topic was given to focus their attention on the task, with the intention of capturing their initial perceptions. A briefing about the concept mapping strategy was made and the basic requirements of a concept map were explained with the support of a handout that described essential elements of a concept map. They were given adequate time to draw their concept maps manually, in any language they were comfortable with.

Qualitative analysis and interpretation of these initial concept maps created by the teachers was done in detail in the following manner:

- A structural analysis was conducted based on the three typologies - Chains, Spokes and Networks (Kinchin, 2008; Kinchin et al., 2000). Each concept map was analyzed according to the basic organization of key/focal concepts, sub-concepts, links, cross-links, labels and examples, and initially classified as falling into one of the three categories – Chains, Spokes and Nets. These were again sub-categorized into simple/complex chains; simple/complex spokes; simple/complex nets, based on further analysis.

- (b) A content analysis of the key/focal concepts, sub-concepts, links, cross-links, labels and examples in the concept maps, was conducted using systematic coding and categorizing of words and phrases in them.

Findings and Discussion

The data comprised structural and content analysis of a total of 223 concept maps created by the participant student teachers from the nine OUSL centres.

Structural Analysis of the Concept Maps

The structural analysis of the concept maps was indicative of the participants' existing understandings and perspectives on "Openness in Education". Table 2 summarizes the number of concept maps under each category and subcategory, centre-wise.

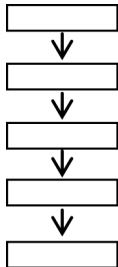
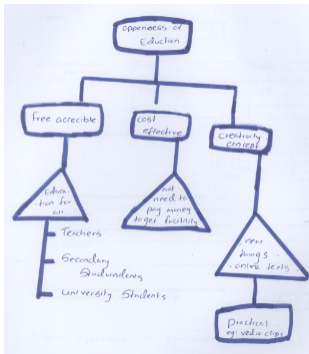
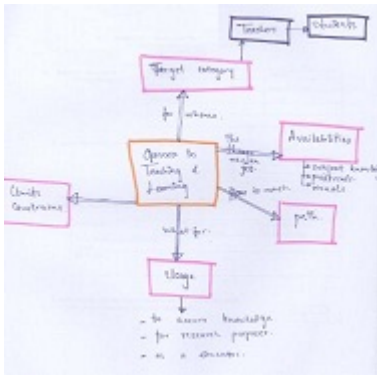
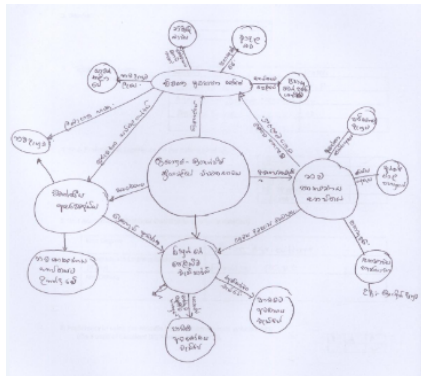
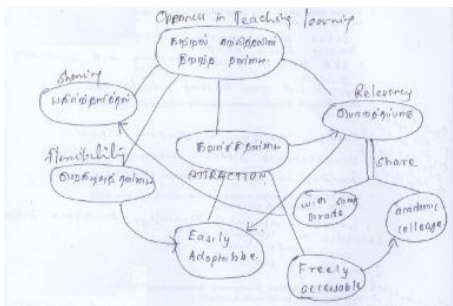
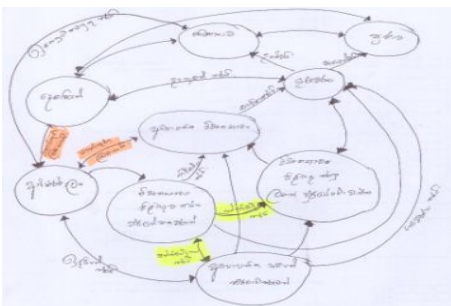
Table 2: Categorization of Teachers' Concept Maps – Centre-wise

Centre	Chain Type (No. of CMs)		Spoke Type (No. of CMs)		Network Type (No. of CMs)		Total (No. of CMs)
	Simple (CS)	Complex (CC)	Simple (SS)	Complex (SC)	Simple (NS)	Complex (NC)	
Anuradhapura (Anu)	-	3	6	9	7	1	26
Badulla (Bad)	-	1	-	7	7	2	17
Batticaloa (Bat)	-	4	6	21	5	-	36
Colombo (Col)	-	4	-	18	7	1	30
Jaffna (Jaf)	-	9	3	22	4	-	38
Kandy (Kan)	-	1	3	18	2	-	24
Kurunegala (Kur)	-	2	3	13	2	-	20
Matara (Mat)	-	2	1	14	5	1	23
Ratnapura (Rat)	-	-	2	6	1	-	09
Total	00	26	24	128	40	5	223
Percentage %	00	11.7	10.8	57.4	17.9	2.2	100%

Categorization of concept maps specifically under the three typologies was not that easy because in certain instances some cross-linking at different hierarchical levels has resulted in combinations of chains and spokes, also leading to the creation of simple nets.

While a majority of the concept maps (68.2%) were found to be spoke structures which demonstrated limited or a superficial understanding of the concepts, there were some network structures (20.1%) signifying a more deeper understanding of the concepts. A smaller percentage of chains (11.7%) existed. Interestingly, there were no 'simple chains' constituting only a single linear chain. Even the simplest forms of the concept maps had two or more chains, with at least two concepts at hierarchical levels, radiating from a single concept, making it a very simple spoke. However, when there was considerable linearity in the structure of such maps, giving the effect of a flow chart, with no linking to other parts (eg. CC1-Anu), those were categorized as 'complex chains' rather than spokes, due to their mostly uni-directional nature.

On the other hand, few cross-linking among simple chains or spokes has resulted in simple networks (eg. NS1-Jaf). When there were several cross-linking among concepts, including explanatory linking words/phrases, complex networks are formed (eg. NC1-Bad), indicating a more in-depth understanding of the concepts. However, such complex network type concepts were found to be very limited.

Category/ Sub-category	Simple	Complex
Chain	 <p>(Not available)</p>	 <p>CC1-Anu</p>
Spoke	 <p>SS2-Kur</p>	 <p>SC3-Bad</p>
Network	 <p>NS1-Jaf</p>	 <p>NC1-Bad</p>

The analysis of the morphological structures itself only did not provide an adequate indication of participants' perspectives on 'openness in education'. Cross-linking among concepts with linking words/phrases was considered as strong evidence of conceptual and explanatory richness within a concept map to indicate a deep understanding. Such highly integrated complex concept maps with explanatory linking phrases were very limited within the sample, revealing the narrow prior understanding of teachers on the topic. For instance, in certain concept maps there may have been several concepts at different levels with links and even cross links resulting in illustrations of seemingly complex structures, yet having ill-defined concepts lacking explanatory phrases suggested only superficial knowledge of participants on the topic and their limited thinking.

However, there were a very few teachers who were able to construct linked spoke or network structures from their existing knowledge in a meaningful manner with the use of explanatory linking words/phrases. This indicated more focused thinking and organization of their existing concepts around 'openness in education', even though understandably their knowledge on OER-related concepts may not be that deep, due to its novelty. This is a positive feature implying the scope for expansion of thinking and further understanding over time.

Content Analysis of the Concept Maps

The content analysis of the concept maps allowed further understanding of participants' thinking around 'openness in education'. Key or focal concepts that emerged in the concept maps were identified as categories, and sub or related concepts under each category were labeled with different codes. Based on the detailed content analysis of all 223 concept maps of participants in nine centres, a summary concept map was created capturing teachers' perspectives, and presented in Figure 3.

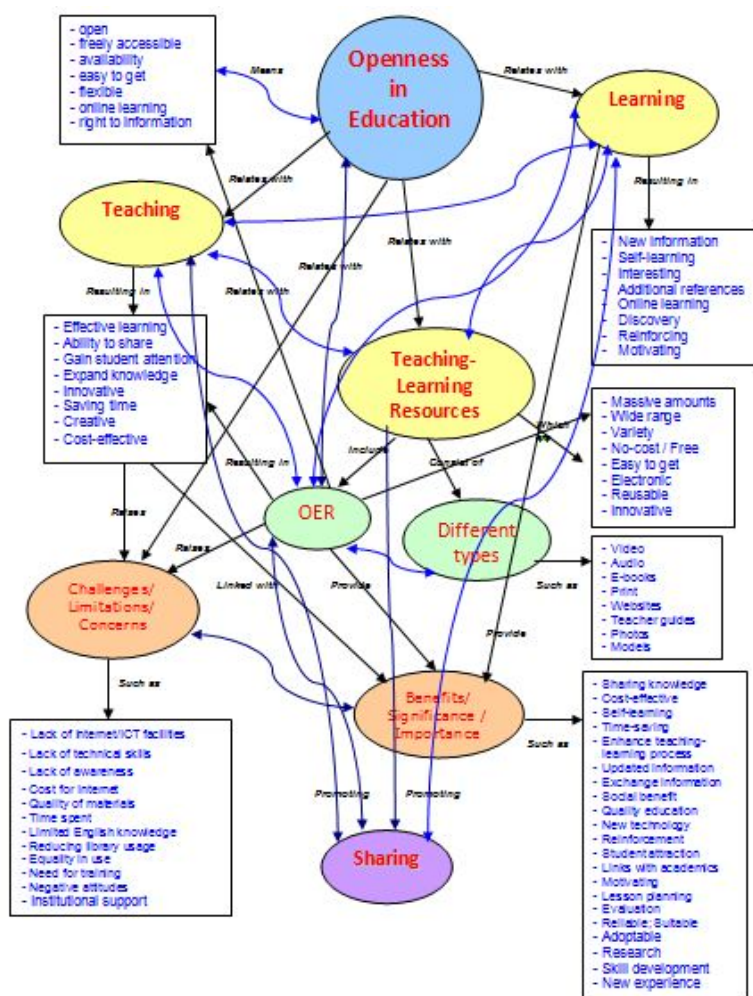


Fig. 3: Summary concept map on teachers' perspectives as captured from their concept maps

As illustrated by Fig. 3, concept mapping strategy itself was used by the researchers to summarize all the perspectives of teachers as captured through their own concept maps. These were organized and presented as concepts under the main categories and sub-categories identified during the content analysis. Colour coding was used to differentiate the categories. The various relationships occurred among the concepts were indicated using links and cross-links with explanatory words.

Since the teachers were requested to draw concept maps indicating their current understanding and thinking in relation to “Openness in Education”, this phrase was indicated as the core concept in a majority of concept maps (>90%). In addition, there were several other key concepts identified by the teachers that could be categorized under three main aspects – teaching, learning and teaching-learning resources. Further, there were several sub-concepts associated with these three aspects, which were further sub-categorized as types/forms, advantages/benefits/importance and challenges/limitations/concerns. In addition, a range of sub-sub concepts identified in relation to these sub-categories, were also presented as examples in boxes.

A majority of the teachers have focused their attention on teaching-learning resources as a key concept in relation to the “openness of education”. While a variety of resources familiar to them such as text books, videos, audios, teachers guides, research publications, laboratory instruments, electronic media as well as internet resources were indicated, only a very few has mentioned OER, confirming its novelty to them. However, many have specified factors such as availability, easy access, flexibility, cost-effectiveness, time saving, updated information and sharing information as related concepts with the instructional resources, indicating their perceptions on the significance of such factors in teaching and learning.

Similarly, with regard to the teaching and learning aspects too, teachers have identified diverse associated factors such as, obtaining new information, self/independent learning, effective/innovative/creative methods, gaining attention and motivating students as well as sharing knowledge. While acknowledging such benefits and advantages, they have also identified various challenges faced such as lack of facilities and resources, lack of awareness, limited technical skills and English language skills, cost of internet, together with concerns such as quality of materials, time spent and negative attitudes.

This content analysis of the concept maps revealed that even though the concept of OER was novel to the teachers, their perspectives on ‘sharing’ and ‘openness’ in education and its relevance to teaching and learning were quite optimistic. Despite the fact that a majority of concept maps lacked explanatory phrases and focus of thinking as revealed by the structural analysis, and suggested somewhat superficial knowledge of participants, this revelation via the content analysis is indicative of an overall positive perspective of the teachers.

Implications

The concept mapping exercise was adopted by the teachers as a useful strategy to visualize their understandings around “openness in education” in a creative manner. As a ‘graphical tool for organizing and representing knowledge’ (Novak and Cañas, 2008), and as a ‘relational device’ that outline relationships between different ideas (Davies, 2010), it provided them with an opportunity not only to organize their thinking but also to reflect on their understandings. The links and cross-links in a concept map illustrate a person’s understanding of relationships between the domains and sub-domains of knowledge, while linking words describe the connections between related concepts. It is a powerful tool for capturing and representing higher order cognitive processes such as – analysis, evaluation and synthesis.

During this action research project on integrating OER in educational practices of secondary school teachers, the participants are expected to develop a series of concept maps, at various stages during the intervention. Since a concept map is never finished (Novak and Cañas, 2006) participants are able to update their maps with the addition of new concepts, as their understandings expand and deepen. The comparison of different versions of concept maps will reveal the incremental developments in their understandings over time. Concept mapping strategy will thus support teachers to reflect on their changing perspectives on “openness in education”.

Conclusions

During this study, the concept mapping strategy was used to identify and analyse teachers’ pedagogical perspectives on “openness in education”, through the analysis of the structure and content of their initial concept maps. The structural analysis of the concept maps indicated the occurrence of three types: chains, spokes, and network; a majority being spoke structures indicating a limited understanding, and some network structures signifying a deeper understanding.

The content analysis of the concept maps revealed that even though the concept of OER was novel to the teachers, their perspectives on ‘sharing’ and ‘openness’ and its relevance to teaching and learning were quite positive and optimistic. Despite various issues such as technical problems and skill limitations, it was encouraging that the teachers were prepared to face such challenges and integrate these concepts in their teaching, as depicted by their concept maps.

Concept mapping strategy can be effectively used not only to capture teachers’ pedagogical perspectives and how it changes, but also to support teachers to reflect on their changing perspectives on ‘openness in education’, and improve them, so that it will eventually affect their professional practices towards a positive change.

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PEER-FACILITATED DISCUSSIONS TO ENHANCE OER-BASED E-LEARNING

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Abstract

Open Educational Resources (OER) can play a significant role in nourishing the participatory culture of learning, creating, sharing and cooperation in rapidly changing knowledge societies (Cape Town Declaration, 2008). Information and Communications Technology (ICT) enables collaborative and co-operative approaches to knowledge construction through OER. The opportunities offered by ICT and OER help to optimize the design of effective, efficient and engaging learning experiences (Naidu, 2010). The Open University of Sri Lanka with the support from Commonwealth Educational Media Centre for Asia implemented a fully online professional development course on OER-based e-Learning. It adopted a scenario-based learning design within the constructivist pedagogy, incorporating authentic learning scenarios with specific tasks designed to facilitate knowledge construction in a collaborative manner with the support of OER, mainly through peer-facilitated discussion forum activities. This paper is a case study of how peer-facilitated discussions affected the OER-based e-Learning process, what factors supported and hindered peer-facilitated discussions, and what challenges were faced during the process. The six-month course of five modules comprised 14 discussion forum activities leading to assessment tasks. Initially 35 educators participated, yet only 10 participants successfully completed the course. Content analysis of the threaded forum discussions was the key data collection and analysis strategy based on the Community of Inquiry framework (Garrison & Arbaugh, 2007), supplemented with self-reflections and focus group discussions. The three elements- cognitive presence, social presence, and teaching presence played a major role in knowledge construction in OER-based e-Learning. Forum discussions created an opportunity for learners in meaning-making together through social negotiation, where facilitation became a shared responsibility among instructors and learners. Peer-facilitation was identified as the key strength that supported their learning experience, promoting critical, analytical and reflective thinking, self-regulated learning, and creating a learning community. The learning design that used authentic scenarios, individual and group learning and assessment tasks with OER integration and specific instructor guidance were found to be the most supportive factors, while time constraints due to workload was the main challenge that hindered the discussions. Peer-facilitated forum discussions can be creatively used in a meaningful manner for knowledge construction, through carefully orchestrated, well-structured and pedagogically-sound OER-based e-learning environments.

Keywords: *OER-based e-Learning, Peer-facilitated discussions*

Introduction

The advent of Open Educational Resources (OER) movement has opened up vast opportunities for innovative approaches in course design and delivery, especially in open and distance learning (ODL) contexts. The educational potential of OER which is based on a pedagogical and a digital dimension (COL, 2011) can be effectively harnessed by giving equal attention to both dimensions. While the pedagogical dimension requires a change from the conventional pedagogical beliefs and practices, the digital dimension is supported by the enhanced affordances of emerging new technologies. Rapid advancements in information and communications technologies (ICT) enable efficient and flexible access to a wide variety of learning resources as well as communication facilities that support resource-based, collaborative and cooperative learning. However, such affordances of ICT can be made possible only through careful organization of teaching and learning formats.

The adoption of OER essentially requires a sharing culture among individuals. Integration of OER in the design of e-learning experiences would allow innovative use of technology as well as innovative use of pedagogy, enabling collaborative and co-operative knowledge construction by learners. Hence, OER-based e-learning can make a significant impact on changing pedagogical practices, by utilizing the opportunities offered by ICT and OER to optimize the design of effective, efficient and engaging learning experiences (Naidu, 2010).

The Open University of Sri Lanka (OUSL) with the support from Commonwealth Educational Media Centre for Asia (CEMCA) implemented a fully online course on OER-based e-Learning (OEReL), that has been adapted from a core set of modules in a course developed by CEMCA in collaboration with the Wawasan Open University, Malaysia. This professional development course consisted of five modules: Concept and Practices of OER; Search and Evaluation of OER Materials; Licensing and Copyrights; Designing Learning Experiences for OER-based e-Learning and Integrating OER in e-Learning. It was implemented during a period of 24 weeks commenced from December 2014, for academic staff members of the OUSL. It adopted a scenario-based learning design within the constructivist pedagogy, facilitating knowledge construction in a collaborative manner with the support of OER, mainly through peer-facilitated discussion forum activities.

This paper is a case study of how peer-facilitated discussions affected the OER-based e-learning process of the participants, what factors supported and hindered peer-facilitated discussions, and what challenges were faced by them during the process.

Review of Literature

The concept of OER encourages changing the traditional roles of teachers and learners to become collaborators in knowledge construction. A constructivist learning environment will support collaborative construction of knowledge through social negotiation among individuals, and the meaningful use of technology will enable such learning (Jonassen, Peck & Wilson, 1999). Since OER is playing a significant role in nourishing the participatory culture of learning, creating, sharing and cooperation (Cape Town Declaration, 2008), integrating OER into teaching and learning, supported by technology, will necessitate a systematic design based on constructivist principles, theories and models.

E-learning, commonly referred to as the ‘intentional use of networked ICT in teaching and learning’, incorporates ‘all educational activities carried out by individuals or groups working online or offline, and synchronously or asynchronously via networked or standalone computers and other electronic devices’ (Naidu, 2006, p.2). Developing an OER-based e-learning environment will require more learning-centered pedagogical designs grounded in social constructivism, where learning becomes a collaborative process within a cultural and social context (Vygotsky, 1978). Scenario-based learning (SBL) is such a collaborative pedagogical design appropriate for e-learning, which incorporates authentic learning scenarios to situate learners and engage them in learning through facing

challenging tasks (Naidu, 2006). However, the opportunities afforded by ICT can be optimally utilized only by the careful design of learning experiences.

From a social constructivist perspective, ICT enables ample opportunities for learners to construct knowledge together through various synchronous and asynchronous strategies. Computer conferencing, more specifically asynchronous online discussion forums, play a significant role in this regard (Garrison, 1997). Further, discussion forums are proven to be very effective peer-based e-learning environments (Baran & Correia, 2009; Harris & Sandor, 2007; Rourke & Anderson, 2002). Peer learning occurs when the learners actively participate in knowledge construction through interactions with each other, and hence such an environment will be aligned with a more constructivist approach.

A successful online learning will depend on how the learners are supported and facilitated throughout their learning process. The 5-Stage Model of e-Moderation (see Salmon, 2000) provides a framework to support or scaffold learners in an online learning environment. Accordingly, the online environment should be designed to facilitate learners to progress smoothly along these five stages: Access & Motivation; Online Socialization; Information Exchange; Knowledge Construction; and Development (Salmon, 2000). This structured programme would be further enhanced with careful design of online learning activities - “e-tivities” (see Salmon, 2002), that will enable active and participative online learning by individuals and groups.

The practice of online learning can be guided by the Community of Inquiry (CoI) framework which identifies critical prerequisites for a successful online learning experience (see Garrison, Anderson & Archer, 2001). It comprises three elements - cognitive presence, social presence, and teaching presence, as well as categories and indicators to define each presence (Garrison & Arbaugh, 2007). Cognitive presence is defined as “the extent to which the participants...are able to construct meaning through sustained communication” (p.89); Social presence is described as “the ability of participants...to project their personal characteristics into the community, thereby presenting themselves to the other participants as real people” (p.89); Teaching presence is explained in two functions 1) “design of the educational experience” performed by the teacher and 2) “facilitation”, that may be shared among the teacher and the students (Garrison et al., 2001). The CoI framework considers construction of meaning through social collaboration; hence it is grounded in social constructivist theory.

OEReL Online Course

The online learning environment of the OEReL course was created in the Moodle learning management system (LMS). It was designed considering key design principles appropriate for e-Learning including real world, problem-based learning situations where learners are encouraged to become self-regulated learners through social negotiation, with the facilitation of online tutors (Salmon, 2000). It adopted a scenario-based learning (SBL) design grounded within the constructivist pedagogy, incorporating authentic learning scenarios where learners are situated and challenged with various tasks (Naidu, 2010).

A common structure was adopted in all modules as follows: a learning Scenario; an individual activity based on it; supportive learning resources (OER); a group activity via a discussion forum; and an assignment submission including a self-reflection. A sample module format is presented in Fig. 1.

15 March - 21 March

Planning for an OER-based e-Learning Course



Fig. 1: A sample module format

Specific tasks were designed to facilitate knowledge construction in a collaborative manner with the support of OER through the peer-facilitated discussion forum activities. These tasks were created with the influence of the ‘e-tivities’ framework (Salmon, 2002). A sample format of a group discussion activity is presented in Fig. 2.

Dialogue Begins...(Group Discussion - 1)

Post your individually developed learning outcome (**only one L.O.** in relation to your selected topic to be designed as an OER-based e-Learning course), to this discussion forum within the first two days of the week.

Post this as a reply to the discussion topic already started, and keep along that same thread.

During the first three days of the week, respond to the posts of at least two of your peers and comment on the appropriateness of the three components of each LO, with suggestions on how they might be improved.

e-Moderator interventions:

The moderator will log into the forum once every day to offer feedback and guidance.

Schedule and time:

One week (spread over 5 days).

Posting your work should happen during the first two days of the week.

Responding to work of your peers should be done within the first three days of the week.

Learning Resources:

The essential resources (OER) and additional resources given will help you write your learning outcomes. You need to study the relevant sections/pages indicated in the web links given.

Next:

Based on peer feedback and tutor comments, you can now revise and refine the LO developed by you, and then finalize all required learning outcomes (3-5) for your course, along the same lines, clearly indicating the three key components required (Behavioral change, Condition; Standard) in each LO, and also indicating the learning domain (Cognitive/Psychomotor/Affective) under which each LO can be placed.

This will be your Assignment - Part I

Fig. 2: Format of a Group Discussion Forum Activity

Participation in the discussion forum was an assessment requirement, and hence a rubric was prepared to assess it and shared with all participants via the LMS, so that all participants were clear about the expected contributions. Fig. 3 indicates the common assessment rubric used for discussion forums.

Aspect	Criteria	Points 5	Points 4	Points 3	Points 2	Points 1	Points Received and Comments
(c) Engagement in the Group Discussion Forum	5. Active Participation: How often; Meaningful contributions; Critical/Analytical/Constructive comments to peers	Participated in the discussion forum with at least 3 contributions – one self-post and two peer feedback posts critical/analytical /constructive comments provided to peers	Participated in the discussion forum with at least 3 contributions – one self-post and two peer feedback posts , but not critical/analytical /constructive comments	Participated in the discussion forum with at least 2 contributions – one self-post and one peer feedback posts critical/analytical/constructive comments provided to peers	Participated in the discussion forum with at least 2 contributions – one self-post and two peer feedback posts , but not critical/analytical /constructive comments	Participated in the discussion forum with at least 1 contribution – one self-post or one peer feedback posts but not critical/analytical /constructive comments	

Fig. 3: Assessment Rubric for Discussion Forum Activity

Methodology

Research Design and Research Questions

This was a descriptive study of how peer-facilitated discussion forum activities affected professional development in OER-based e-Learning of a group of academics within a specific context – OUSL, an ODL institution. A case study approach was adopted in this inquiry, which allowed an in-depth examination and gaining first-hand understanding of people and events in a real life context (Yin, 2003).

The research questions of the study were as follows:

1. How did peer-facilitated discussions affect the OER-based e-Learning process among educators?
2. What factors supported the peer-facilitated discussions in enhancing OER-based e-Learning?
3. What factors hindered the peer-facilitated discussions in enhancing OER-based e-Learning?
4. What challenges were faced by the educators in the peer-facilitated discussions?

Participants

The participants of the study consisted of academic staff members representing various departments of OUSL. Table 1 presents the background information of the participants.

Table 1: Participant Profile

Aspect	Category	Number	Percentage%
Gender	Male	17	48.6
	Female	18	51.4
Highest Educational Qualification	PhD	13	37.1
	MPhil	03	8.6
	Masters (Other)	09	25.7
	Post Graduate Diploma	01	2.9
	Bachelors Degree	09	25.7
Current Designation	Professor	02	5.7
	Senior Lecturer	12	34.3
	Lecturer	15	42.9
	Librarian	04	11.4
	Lecturer (Temp)	02	5.7
Experience as an Educator (in the Higher Education Sector)	<=5	13	37.1
	6-10	09	25.7
	11-15	03	8.6
	16-20	03	8.6
	>20	07	20.0
Proficiency in the use of Moodle (LMS)	Excellent	10	28.6
	Average	20	57.1
	Poor	05	14.3

The 35 participants who enrolled in the OEReL course constituted 51% females and 49% males, majority being lecturers (42.85%) and senior lecturers (34.29%). While a majority (62.85%) was with less than 10 years experience in the higher education sector, 85.71% have claimed either excellent or average proficiency in the Moodle LMS. However, by mid-course, out of 35 registered, 14 participants (40%) were actively engaged in the course, and only 10 participants (29%) successfully completed all five modules receiving Mozilla badges.

Collection and Analysis of Data

Data collection was conducted throughout the course using various strategies. For the purpose of this study, content analysis of the threaded forum discussions was the key data collection and analysis strategy based on the Community of Inquiry (CoI) framework (Garrison et al., 2001). It was supplemented with participants' self-reflections and focus group discussions conducted with them.

The five modules in the OEReL course comprised 14 discussion forum activities leading to the assessment tasks. For the content analysis of the threaded discussion forums, an individual discussion post, demarcated by the participants themselves as an individual 'message', was considered as the 'unit of analysis' (Garrison et al., 2001). Each message was analyzed, classified and coded according to the indication of three presences – Cognitive, Social and Teacher presence, based on the CoI framework as explained in Table 2.

Table 2: Strategy Adopted for Data Analysis

Element	Code	Explanation	Indicators
Cognitive Presence	CP	The extent to which the participants are able to construct meaning through sustained communication.	Sense of puzzlement; Information exchange; Connecting ideas; Apply new ideas
Social Presence	SP	The ability of participants to project their personal characteristics into the community, thereby presenting themselves to the other participants as ‘real people.’	Emotions; Risk-free expression; Encouraging collaboration
Teaching Presence-1	TP-I	Design of the educational experience; Facilitation and Direct instruction, by the instructor.	Setting curriculum & methods Sharing personal meaning; Focusing discussion
Teaching Presence-2	TP-S	Facilitation and direct instruction by the students.	Sharing personal meaning; Focusing discussion

A total of 910 messages that were posted in the 14 discussion forums were analyzed and coded in the manner indicated in Table 2. Having discussed and agreed upon the coding and categorizing strategy, each message was analyzed by two researchers to maintain the reliability. During the coding, it was also determined whether there was an indication of more than one type of presence, within a single ‘unit of analysis’, i.e. a single message.

Findings and Discussion

The findings of the detailed analysis of the discussion forum messages are presented in Table 2.

How did peer-facilitated discussions affect the OER-based e-Learning process among educators?

During each discussion, knowledge constructions among the participants was very clearly observed where they shared and build up on their understandings through dialogue. The specific guidelines provided by the instructors in each task (see Fig. 2) and criteria in the assessment rubrics (see Fig. 3), compelled them to post their individual drafts for peer review and post critical and constructive feedback to their peers, which in turn supported them all in their learning. This implies the significance of well-designed tasks to arrive at a collaborative resolution in a ‘community of inquiry’ (Garrison & Arbaugh, 2007), and enhance knowledge construction in online learning (Salmon, 2000).

Table 2: Analysis of Discussion Forum Messages – Module-wise

Module No.	Disc. Forum	No. of active participants (I+S)	Total Posts	CP		SP		TP-I		TP-S	
				No.	%	No.	%	No.	%	No.	%
1	1	22	99	94	95	43	43	05	5	41	41
	2	18	90	66	73	35	39	12	13	16	18
	3	14	56	38	68	32	57	03	8	16	42
2	1	15	84	77	92	52	62	05	6	26	34
	2	12	60	41	68	35	58	05	8	19	32
	3	13	66	50	76	42	64	02	3	27	41
3	1	11	66	38	58	41	62	04	6	21	32
	2	11	37	29	78	19	51	02	5	11	30
	3	11	95	53	56	48	51	07	7	25	26
4	1	11	76	57	75	41	54	04	5	18	24
	2	11	64	50	78	30	47	02	3	12	19
	3	11	45	31	69	20	44	05	11	15	33
5	1	11	35	23	66	27	77	06	17	09	26
	2	11	37	27	73	26	70	05	14	15	41
Total	14		910								

A very clear observation was that in most of the messages, all three presences – cognitive, social and teacher, or at least two presences occurred. Hence, the total number of posts, when considering all three categories, exceeded the actual total number of posts in a discussion. Following are a few examples of coded messages, indicating the presence of multiple presences within a single unit of analysis.

What a colorful concept map! (SP)

You have identified the key concepts and shown their relationships. (CP)

I have some comments to improve it further: The question given to us is to develop a concept map about 'Openness in Education' not about 'OER based e-Learning'. So you have to change your main theme. Build your key concepts and related concepts around the main theme linking them in a logical order (TP-S)

Hope you will do a better job in the next version. Hurry up!! Tomorrow is the deadline!!!. (SP)

#M1-D1-G2

Good work! Seems that you have almost completed the task. (SP)

You have nicely gathered number of criteria to evaluate the OER material given. And also described the relevance, effectiveness and importance of selected criteria on evaluation. (CP)

However your answer would be more comprehensive if you evaluate the OER material (Video) by using the identified criteria. (TP-S)

Good luck for your final submission. (SP)

#M2-D3-B1

It was quite evident that while cognitive presence and social presence have played a major role in the knowledge construction process, the teaching presence of students in facilitating their peers too was highly significant. It was also interesting to note that a majority of messages had a common pattern-starting with a phrase with social presence, then cognitive presence and/or teaching presence, and ending with social presence again. Apparently, there was a complementary relationship between all three 'presences', establishing the interdependence of the three elements (Garrison & Arbaugh, 2007).

Since the main purpose of these discussion forum tasks was to enhance knowledge construction through peer-facilitation, the instructors' intrusion during the dialog was minimal, other than setting the task with specific guidance, provision of resources, focusing discussion and commenting when necessary, hence the small percentage of teaching presence of instructors (TP-I). It was clear that teacher presence of students (TP-S) played a key role in peer-facilitation, as evident by the very descriptive and constructive feedback provided to each other. This is in accordance with the CoI model which acknowledged facilitation becoming a shared responsibility among instructors and students (Garrison et al., 2001) enhancing a change of the traditional roles of instructors and learners. It augmented participants becoming more autonomous and self-regulated learners as well as collaborators in the knowledge construction process.

Further, such a structure had allowed 'meta-cognitive awareness' (Garrison & Arbaugh, 2007) among the participants as they became aware of changes in their thinking and conceptual understandings through the discussions. Since the concept of OER was novel to a majority of the participants, the structure of the forum discussions within the course design, that were directly related to authentic issues in the adoption of OER by educators, assisted them to gradually build up their knowledge, involving a deep learning supporting a more higher order thinking process.

What factors supported the peer-facilitated discussions in enhancing OER-based e-Learning?

The participants' responses revealed that the collaborative learning design (SBL) adopted in the course, individual and group learning and assessment tasks, support of OER as learning resources, specific tutor guidance and the peer support extended to each other extremely facilitated their learning. Following are some quotes to support this finding:

"...The design adopted - SBL liked it very much..."
"...The consistent structure in the modules contributed to ease of navigation which also helped facilitate my learning experience..."
"...I am happy about reading the resources...as they are very relevant and interesting..."
"...I have been able to improve, due to the constructive feedback given by the facilitators..."
"...Peer reviews in the discussion forum are a great learning resource..."

The following quotes further elaborate how the participants valued peer-discussions and their impacts on them.

"...The best part of this is collaborative learning that takes place through the discussion with peers. Earlier I had some doubts that when allowed collaborative learning whether you will be totally influenced by others and your own creative thoughts may not come to work. But after start following the course I found that belief is not correct..."

"...Due to my family commitments I could not learn this module as I did in earlier Modules. Because of my internal motivation to complete this course, I finally hurried to complete my assignment and I felt so lonely, learning alone. I could not participate in discussions and post my assignments to get peer feedback. I also could not give feedback to others. However, I followed all the discussion posts, posted by others and got some valuable insights in drafting my assignment. This is the beauty of online learning, having all discussions posts stored and can be retrieved even at a later stage for the learners who have missed the opportunity of communicating and collaborating in the stipulated time period. In addition I also felt the value of communication and collaboration in an e-learning situation which is crucial for meaningful learning..."

These findings confirm the fact that in a community of inquiry, social presence lays the base for a high level academic dialogue, while the teaching presence created through course design, structure and leadership provided by the instructor impact on deep and meaningful interactions of learners, through which cognitive presence can be developed (Garrison & Arbaugh, 2007).

What factors hindered the peer-facilitated discussions in enhancing OER-based e-Learning?

The key hindering factor that had affected all participants was the time constraint in completing the tasks within the stipulated timeframe per a discussion. According to the course structure, each discussion was to take place within one week, during which the participants had to engage in an individual activity referring to the learning resources, and post a draft submission for peer review, and post constructive comments to at least two peers (see Fig. 1). A majority could not adhere to this timeframe due to their various commitments as full-time academics, as evident by some comments stated below.

“...I am sorry I am late. This is because I was away... and returned only last night (very late). Most of the time there was no electricity there and had very limited internet connectivity and thus could not log-in among the many family commitments... Hopefully some of you will give a few comments...”

“...I am so late for submitting this assignment as I was engaged in other urgent and important matters. As S mentioned "better late than never" even though I prefer to be never late! So I am back again. I know you all are very busy and if you have time please go through my draft (actually a final!) and give your suggestions. Really appreciate your concern...”

Dissatisfaction with resources provided to support the expected tasks in certain modules was identified as a hindering factor by some participants:

“...I was not very satisfied with the reading resources given in this section. Although the resources were good, I could not grasp the main aspects, clearly and easily... I had to search many more resources to get a thorough understanding. ...”

In addition, technical issues affected the smooth run of the course and the participants' learning process:

“...I too was trying frantically to upload the Assgn. till 2.00 am this morning. finally gave up. Now I tried and managed. Some serious problem with the server, I think...”

“...You are not alone. Same problem - the server is not so stable - changing all the time and making us getting frustrated! But don't give up...”

Addressing such issues, often the discussions had to be extended and be flexible with the deadlines too, in order to allow the participants to engage in a meaningful discussion. This stresses the essential need of the teaching presence and social presence of the instructor during the learning process by way of supporting them overcomes the hindrances.

What challenges were faced by participants in the peer-facilitated discussions?

As revealed by data presented in Table 2, the number of participants who actively contributed in the discussion forums has gradually decreased from the first module to the others, and the total number of messages posted has also reduced to some extent. There were certain instances of high number of posts in the discussion forums (eg. 3-3 = 95; 4-1 = 76), implying a high interaction even among a small number of participants. Conversely, there were also some instances of very small number of posts in the discussion forums (eg. 3-2 = 37; 5-1 = 35; 5-2=37), indicating lesser interactions. This observation could be related with the complexity of the tasks required in each of these modules.

As described earlier, the major challenge faced by the participants was the expected workload within the stipulated time, which was a common grievance reflected by almost all.

“...Finding time was a challenge (to all of us I suppose) and it takes more than the stipulated time... I think the facilitators have underestimated the time required to carry out this type of higher order activity which needs time to read, think, analyse and reflect points...”

“...Here is my draft assignment. I am so late to post my assignment and hope there is some body to give me feedback. I am really sorry to say I still could not give you feedback..I will try ...though it is late, learning is not restricted for assignment submissions...”

In addition, some participants faced confusions in understanding certain task requirements that necessitate additional instructor and peer support. Apparently, the ‘cognitive load’ (Sweller, 1988) that was placed upon the participants who were full-time academics, had been quite challenging. However, their commitment and motivation in facing such challenges, especially with peer-support, and completing the course fulfilling all requirements of the 5 modules can be commended.

In order to support and motivate students who faced numerous challenges during the learning process, the instructors continuously communicated with the learners guiding and motivating them, yet without disturbing the peer discussion. This was done through a News Forum included in all the modules, in addition to the peer-discussion forums. Figure 4 indicates an example of such a forum.

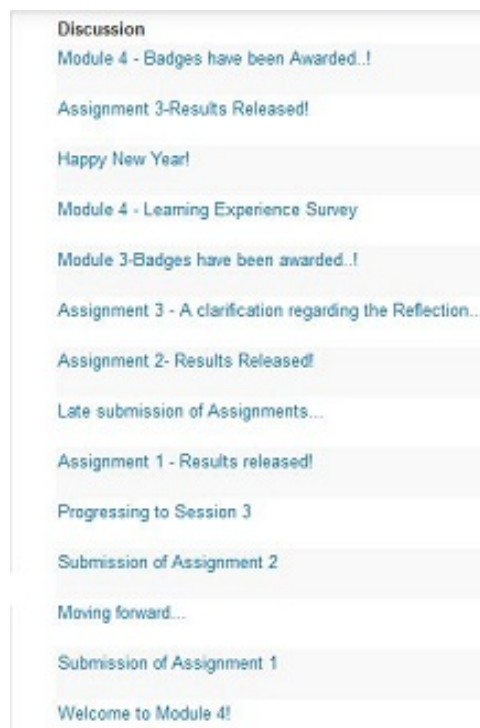


Fig. 3: Sample of a News Forum led by the Instructor

While, the participants appreciated this support, some mentioned it would have been better to include these posts within the peer discussion forums, rather than in a separate forum.

Overall, the findings reaffirm the significant of role of instructors in cultivating the three presences within a peer-facilitated environment, by enabling learners to engage with the content in a meaningful manner through appropriate course design, structure and leadership (Garrison & Arbaugh, 2007).

Conclusions

Peer-facilitated discussion forum activities incorporated in the OER-based e-Learning course were found to be very effective in facilitating the participants in their knowledge construction process. In addition to understanding the content more effectively, the peer discussions have helped them to assess each others' work as well as self-assess their work and further improve. Peer-facilitated forum discussions had created an opportunity for learners in meaning-making together through social negotiation, where facilitation became a shared responsibility among instructors and learners.

The three elements- cognitive presence, social presence, and teaching presence have played a major role in knowledge construction in OER-based e-Learning. While cognitive presence and social presence were found to be the most indicative, teaching presence of students in facilitating their peers too was significant. A complementary relationship between cognitive presence, social presence and teaching presence was observed, where the three elements have interacted in supporting knowledge construction.

The learning design that used authentic scenarios, individual and group learning and assessment tasks with OER integration and specific instructor guidance were found to be the most supportive factors, while time constraints due to workload was the main challenge that hindered the discussions. Peer-facilitated forum discussions can be creatively used in a meaningful manner for knowledge construction, through carefully orchestrated, well-structured and pedagogically-sound OER-based e-learning environments.

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RELEVANCE OF FACE TO FACE TUTORIAL FOR STUDENTS OF DISTANCE EDUCATION

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Abstract

The upward trend in the participation of students of distance education in face-to-face tutorial indicates that there is a need of students to the tutorial mode though it is not a major characteristic of distance education. Through qualitative research, in which data are collected through observation and depth interviews from five tutorial groups as well as analyzed by Theory of Needs, Action Theory, and Rational Choice Theory, obtained a detailed picture of the underlying three-needs of student participation in face-to-face tutorial. The first need is obtained the score of the tutorial that can contribute in improving test scores. Behavior that is raised from this need is compliance with the frequency of attendance and performing tasks tutorial as a minimum requirement in order to obtain a good score. The second need is having a learning atmosphere. Students were most of their time used to work or take care of the household, need a learning reinforcement. Behavior that is raised from this need is to utilize the tutorial time to read module, listening explanation from tutor, and doing tutorial tasks. The third need is having a peer group. Young students, majorities have the same age, require mutually reinforcing interaction. Cooperative behavior is more prominent than the competition because there is no ranking system in the tutorial. When a face-to-face tutorial is not managed properly, the process that occurs in face-to-face tutorial will be far from learning objectives, to produce graduates who can meet the required competencies. Thus, it is important to design tutorial as a medium to develop self-learning through the provision of active student learning methods and the use of the peer group as the reinforcement of motivation and action learning.

Keyword: *Distance education, face to face tutorial, needs, rational action, rational choice*

Introduction

Development of distance education is a result of the shift of the elitist nature of higher education into mass. The development itself is also motivated by the increasing information and communication technology capable in providing learning technologies that can be used flexibly by the participants without any limitations of time and space. For developing countries, the development of distance education also due to reasons of limited resources if the university should provide multi university system as the University of Oxford and Cambridge (Zuhairi, 2004). Therefore, distance education considered to be a way out for the provision of higher education programs that can be accessed in many areas.

There are some fundamental characteristics of the distance education, one of which is the use of technology as a learning medium. Thus, face-to-face learning, commonly used in conventional university, is no longer a major media for distance education. To accommodate the transfer of knowledge and information to the students in many regions, distance education develop learning model that utilizes information and communication technology. Historical development of distance education has passed through five generations, from the use of correspondence, broadcasting, teleconferencing, until internet-based virtual class (Moore, 2012). Now, various innovations related to the use of learning technology are getting developed. Utilization of audio and video become the choice of transferring knowledge and information because people are accustomed to using audio video equipment in everyday life. Then, in line with the increase in Internet usage is exploited the Internet as a medium of learning. Various modes of e-learning, also called virtual learning, continue to be refined.

Utilization of e-learning in distance education due to the distance education has two main characteristics, the separation between lecturer- students and the use of technology as a means of interaction and communication (Anderson, 2004; Moore, 2012; Zuhairi, 2004). In such condition, e-learning is considered more flexible and efficient. E-learning is able to bridge the fulfillment of the needs of lecturer and student because of e-learning provides the flexibility of learning. Lecturers and students can do teaching and learning activities wherever and whenever. Students like e-learning because they can apply a variety of learning styles according to his needs. In terms of efficiency, by attending the e-learning student can make savings of time and money for the trip.

However, some of the criticism directed towards distance education paradigm shows the limitations of e-learning models, especially with regard to the transfer of values and skills. However, separation lecturer and students become a bottleneck in the socialization of values embodied learning materials. Teaching about attitude requires a lot of role models of lecturers who are directly copied by students. In addition, e-learning cannot optimally transfer of practical skills due to the physical presence of an instructor is a role model for students doing practice and practicum. Other limitation of e-learning is a sense of alienation because students lose the physical learning environment, such as friends, teachers, classrooms, even the cafeteria, which are directly considered able to support

Recognizing the limitations on e learning, the distance education institution providing face to-face tutorials in addition to e-learning, One of the universities that provide face-to-face tutorials, in addition to e-learning, is the Open University in Indonesia. At the Open University in Indonesia, a face to-face tutorials followed by about 20% to 25% of students (rector's annual report 2014). These data indicate that a face to face tutorial is an essential requirement for most students of distance education. Therefore, the reason for distance education students attend face to-face tutorial interesting to study.

Theoretical Framework

Students attend face to-face tutorial because students require this type of tutorial. There are various kinds of theories that try to explain about these human needs. The basic principle of the need theory is the individual do what he wants to do in order to get what he wants. Maslow argued that humans act as motivated by a need that is not met. Yorks (1976), Dessler (1986), and Maslow argues that fulfillment of the needs determine the level of satisfaction (Pardee, 1990).

McClelland explained that a individual's actions are directed at fulfilling the need for achievement, affiliation, and power, and these needs are acquired, or learned during an individual's lifetime (Moore, 2010). Thus, individuals actions as driven by the need. However, the actions of individuals are in the network acts of other individual. When individuals act, he should consider the actions of other individuals. They also take account the situational structure that accompany such action. Max Weber called these Individual actions as a social action (Sunarto, 2000).

According to Weber, social action based on rationality. Meanwhile, rational action refers to the social relationship is associative and directed to adaptation measures against various interests. Forms of associative relationship are cooperation and accommodation (Soekanto, 1982). Thus, individual rational action is action in the form of cooperation and accommodation in order to meet the needs of. One type of rational action, within the framework Weber idea, was instrumental rational action, action directed rationally to achieve a particular goal. Becker defines rational action as an action to choose from a range of options/preferences and maximize the information obtained in order to maximize profits. Meanwhile, profits mean as everything related to subjective well-being. Based on Becker idea, rational action is action taken by a rational individual to make choices.

Rational choices, based on economic assumption, claimed that people act based on profit need and it has become common on human behavior. Furthermore, the economic assumptions adopt by social scientists. They also agree to the idea that human action is basically rational. In the act, people will take into account the costs and benefits before they make a choice. When the individual must determine his actions then he will make a calculation to obtain the most satisfactory results. There are three assumptions of Rational Choice idea, (1) individuals act to review the interest themselves and try to maximize private profits, (2) individuals have enough information relating with preferences, (3) individual judgment is made on the basis of logical and mathematical model of behavior (Impithuksa: --).

By using these approaches, it can be described what lies behind the needs of students attend face-to-face tutorials also social action and rational action they raised. Thus, it can be described significance face to-face tutorials to meet the needs of students.

Method

Qualitative approaches used to assess the picture of the needs that underlie the student attend the face to-face tutorial. The needs itself can be seen through the appearance of action and opinion of student on a symptom. By using the emic point of view, information that emerged in the form of individual acts excavated on the basis of the viewpoint of individuals who become informants. Informants are all students and tutors are involved in face-to-face tutorials and tutorial administrator. Selection of informants is based on the premise that the action developed by the individual is a social action because the action is a result of interaction with other individuals. Students develop a specific action is the result of a process of interaction with other students, tutors, tutorial administrator, and even the physical environment.

Therefore, the unit of analysis is the individual social action then extracting the data by observation. Observations carried out once a week for 8 sessions according to the face-to-face tutorials schedule. Observations carried out to obtain a picture of social action that is realized in the form of attitudes and opinions of informants on a social phenomenon. To get the credibility of the data, triangulation techniques implemented through Focus Group Discussion (FGD), in-depth interviews and document review. FGD performed once at the third meeting to obtain a picture of the differences and similarities informant opinion on some social phenomena. Data from observation and FGD explore by in-depth interview and review of documents to obtain a more detailed picture of the needs and rational action behind such rational action.

Data analysis was performed through the stages of data reduction up to the interpretation of the data. The collected data are categorized by themes that are tentative and dynamic. Furthermore, the relationship between the themes sought to form a new theme is more wide-ranging. The relationship between these themes interpreted to form a concept. Thus, looking for a relationship between these themes done continuously to form a complete concept that can explain social phenomena studied.

Results and Discussion

There are three underlying needs of students attend face to face tutorials. These needs are the desire to obtain (1) a satisfactory score, (2) learning atmosphere, and (3) the presence of a peer group. Every need and desire is manifested in various actions and opinion of both of which became the main unit of analysis.

1. The Desire to Getting Satisfactory Scores

Students believe that by attending the face to face tutorial, they will be able to obtain a good score of the course. This is because the score of face-to-face tutorials are also taken into account as a component of the score of the course. Some students describe the significant contribution of this face to-face tutorials score. According to them, course that they attend the tutorial have a much better score than the course that they are not attend the tutorial. This beliefs makes the need of students to face-to-face tutorial is quite high. Students are willing to spend time and money in order to attend face-to-face tutorials.

Big expectations for contribution of face to-face tutorials score is also due to uncertainty students obtain a good test scores. This is in line with the opinion of the tutorial administrator that the student needs face to-face tutorials because if they learn by themselves then they are only able to absorb the lessons of less than 50%. Therefore, tutorial administrator strives to provide face to face tutorials as much as possible for all the courses offered in each semester.

The significance of face-to-face tutorials in increasing the score of the course is fully understood by the students. Students understand that to get a good tutorial score, they must follow the provisions relating to the frequency of attendance and workmanship tutorial task. The average frequency of attendance of students reached 80%. Meanwhile, the attendance rate is highest in the tutorial task sessions.

Behavior that emerged from this understanding is less discipline students in following the tutorial, for example, came too late, is not active during the learning process, not making preparations tutorials, and others. Students do not feel motivated to be active because they argue that "active or inactive, what matters is present and collect assignments, definitely we get a good score". This indiscipline made the tutorial is not running as it should because it is basically the readiness of the student is the main condition of success tutorial (Yunus, 2004). Thus, the tutorial process that occurs not in accordance with the characteristics of distance learning system, which puts the student as a center of learning and tutor only act as a facilitator (Soekartawi, 2004).

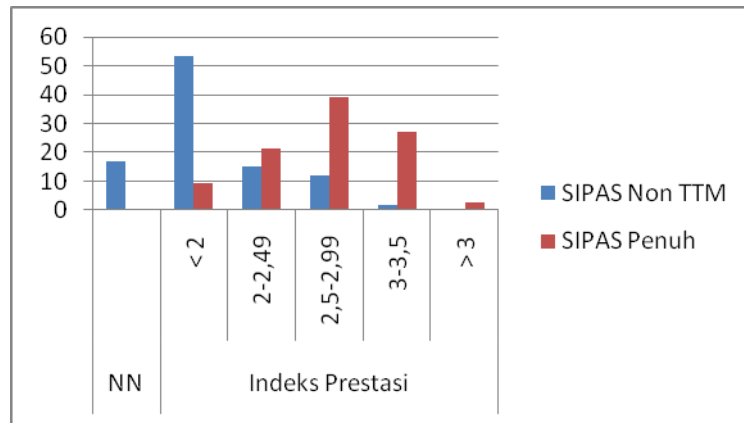
Action raised by the students in order to obtain a good score of courses is rational action. Students already take into account the benefits if they attend the face to-face tutorial. By meeting minimum requirements of face-to- face tutorials, which are present and do task, they could obtain good scores. While, if they do not attend the face to-face tutorial then they have to study very hard to obtain good test scores. Here, students are reviewing the preferences, gathering information, and determine actions in order to gain profit (Impithuksa: --).

On the other hand, tutor also has a common understanding as students. Provisions tutorial that is understood by the tutor is a student attending meetings and doing tasks. Thus, scoring tutorial is based on the frequency of attendance of students and performing tasks. Tutor does not perform his role optimally. Tutor should have not only acted as a source of learning, but also as a facilitator, motivator, and counselors (Wardani, 2000). This condition make distance learning system has a problem in terms of the quality of education (Soekartawi, 2004). Activeness of students during the learning process and the quality of tutorials are key element to be built by both tutors and students to establish the high level of competence of student.

The similarity understanding between tutors and students that comply with the provisions of face-to-face tutorial show that students and tutors has conducted situational definition of the structure where social relations occurred (Soekanto: 1982). Definition of the structure raises situational meaning that, to get good score you must comply with attendance and performing tasks. As depicted in the FGD, majority of the students said that their participation in face-to-face tutorial is to earn a good score. It has been proved based on their experience in the previous semester that the course followed by face-to-face tutorials always had a passing grade; while the course were not followed by the face-to-face

tutorials sometimes have not pass score. The following table shows a comparison of the subjects that followed the acquisition score of face-to- face tutorials and are not.

Comparison chart of Student Value
Scholarships Whole SIPAS (with tutorial) and Sipas Non TTM (non Tutorial)
Period 2013.1



The graph shown that students who attend face-to- face tutorials mostly have a score in the range of 2.5 to 2.99 , even some that can reach 3 to 3.4. Meanwhile, students who do not follow face-to- face tutorials average face score in the range of <2 (Herman: 2010). However, the Open University in Indonesia has imposed a condition that the score of the tutorial can contribute if test scores to meet the passing grade. Nevertheless, students still think that they will be able to obtain a good score if they follow the face-to-face tutorial. Thus, it is certain that there are other needs that the reason why they follow the tutorial. The requirement is a desire to obtain a conducive learning atmosphere.

2. The need for learning atmosphere

Distance education is widely used by those who are already working or have other activities. This busyness always be the reason that students feel they have not enough time to learn the description of their daily busyness through the phrase “after work still had to clean up the house, accompany children learn” or “I give courses in the afternoon”. Therefore they have the notion that the tutorial provides a time and place for them to learn. When students are faced with a situation where they do not have a place and time to learn due to busy then they should choose: no learning, study at home / office, or attend the tutorial, then they attend the tutorial because they want to get good scores.

Tutor and tutorial administrator understand the inability of students to manage their study time due to their busy. One tutor said that “students should be forced to attend the tutorial because by attending the tutorial, minimally students have read or heard of the learning material”. In addition, students are also able to share their experiences about their work as part of the tutorial material enrichment.

An overview of the difficulties students manage study time showed that students who learned through the distance education system has a problem with self-learning ability and motivation (Wardani, 2000). These students require a medium of socialization that are reinforcing, so that the distance learning system in addition to basic learning materials and support the necessary learning materials are also tutorials (Wardani, 2000).

Students' understanding of the situation themselves brings understanding to their own needs. Their involvement in the face to face tutorial is in order to acquire learning atmosphere because daily environment are not supporting their role as students of distance education. For example, one student said that “at home no one is reminded me to learn”. In the tutorial activity they have the opportunity to learn material, listening to the explanation of tutor, and ask for help if there are difficulties. Here,

the students still take into account the gain factor when they decided to attend the face to-face tutorial, namely learning atmosphere that they did not find in their daily routine.

3. Need for Presence Peer Group

Most students have the same age, and some others have the same job as a teacher. The similarity of age and work became the basis of the formation of peer group among them. Tutorial activities are media for sharing information and experiences, as well as to access information from their senior, that tutor or tutorial administrator who works at the Department of Education.

At the break, the students talk to each other about many things, among other hot topics going on around them, the information related to their work as teachers, or just make a joke. For students, the rest period is a time for them to get information from tutors or tutorial administrator who works at the Department of Education. According to them, one of the benefits they attend the tutorial is that they have the information about the new provisions or labor formation earlier than other friends at work. In addition, they also hope relations student, tutor and tutorial administrator can also be a bonding connection for the sake of their careers. Here, it appears that social relations that is patterned based on the interests of individuals to meet their needs (Soekanto: 1982), for example, a student hoping to get a lot of information related to their work from the employees of the education department. The participation of students in face-to- face tutorial activity was not only driven by the needs of academic nature, such as get a good score or get a suitable learning atmosphere. Students attend face-to- face tutorials are also driven by the need to be close to the source of the information they need, in this case the needs of job-related information.

Conclusions and Suggestions

Students have a number of needs when they decide to attend face-to-face tutorials. They realized that in order to meet their needs so they have to spend a number of financing, such as tutorial costs, travel expenses, time, etc. They had calculated the benefits they will get when they attend the face to-face tutorial. There are three basic needs relate to their role as a student of distance education or as individuals. As a student they have a need for getting a good score so that they can meet the qualifications required by their job. In addition, as part time students then they need a learning atmosphere that provides support for their learning activities. Another reason is the similarity in the field of work on most of the students, tutors and tutorial administrator so that their presence in the tutorial provides an opportunity for them to obtain important information related to their work of tutors and tutorial administrator who work on education department.

This shows that face-to-face tutorials have relevance to the needs of students. However, it does not mean that face-to- face tutorials should be held based on the needs of students by ignoring the basic provisions of the tutorial. If face-to-face tutorials are not managed well, the main purpose of the tutorial, which helps students achieve competencies required program maximally, was not achieved. To design proper tutorial activities, the three needs of the student can be used as a reference, but still in order to achieve the purpose of the tutorial itself.

The student needs to get a good score should be the basis to design the learning process that is able to make students understand the learning material optimally. That requires good planning tutorial, tutors are qualified, the delivery of appropriate learning materials, and accurate measurement tools. The main thing that should be developed is the independence of the student in the learning process. The learning process should be focused on student learning center which can be done through several ways, (1) the reduction of the role of tutor as the person in charge of outlining the learning materials, (2) require students to make a concept map for each material to be studied that these tasks were scored, (3) multiply tasks and exercises that were scored. Thus the students become more active and creative and also reduce the frequency of student absent. In addition, by extending the task and exercise the student mastery of the learning material will be optimized.

Meanwhile, to develop a learning atmosphere that is conducive it must be met with certain conditions: (1) the tutor must have good communication skills, (2) the class should be made into a fun learning through the use of methods, props, and the right media, (3) make active students as role models in the learning process. Furthermore, the proximity of the student with another student, the tutor, and with tutorial administrator can be used as a medium to motivate students achieve learning goals. Stories of best practice can be shared in this peer group. Good students have to be used as a role model who transmits the spirit to achieve the learning objectives to other students.

Thus it can be said that the role of the face-to-face tutorials, although not the major media in the learning process in distance education, cannot be ignored. The closeness of students with a learning environment is still a powerful medium for transmitting knowledge, value, and skill. Thus, face-to-face tutorials can also be used as a medium for studying all available learning technology infrastructures. By combining the power of e-learning and face-to-face tutorials are based on the needs of students, the quality of learning process in distance education can be guaranteed.

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